

244104

JPRS-EEI-84-075

28 June 1984

East Europe Report

ECONOMIC AND INDUSTRIAL AFFAIRS

19980811 057

PRINT QUALITY INSPECTED 3



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28 June 1984

EAST EUROPE REPORT
ECONOMIC AND INDUSTRIAL AFFAIRS

CONTENTS

BULGARIA

Report on Bulgarians Working in USSR (Kiril Panayotov, Vasil Asparukhov; OTECHESTVEN FRONT, 17 May 84).....	1
Fulfillment of Tasks in Agriculture Urged (Editorial; RABOTNICHESKO DELO, 23 May 84).....	4

GERMAN DEMOCRATIC REPUBLIC

Strategies for Lowering Energy Consumption Outlined (H. Ziergabel; ENERGIEANWENDUNG, No 2, Mar/Apr 84).....	7
New Curricula, Trends in Vocational Training Announced (IWE TAGESDIENST, No 77, 26 May 84).....	21
Briefs	
Automation Causes Wage Increases	23
Practical Solutions From Chemistry	23

HUNGARY

Briefs	
New Coal Field	24

POLAND

Dairy Price Drop Cited To Discount Antireform 'Demagoguery' (RZECZPOSPOLITA, 26-27 May 84).....	25
Office of Prices Ruling Laws of the Marketplace, Editorial	

Briefs	
Copper Production	27
New Generating Capacity	27
 ROMANIA	
Program for Improving Quality, Reducing Energy Consumption (BULETINUL OFICIAL, No 26, 27 Mar 84).....		28
 YUGOSLAVIA	
Foreign Trade Results in First Quarter of 1984 (EKONOMSKA POLITIKA, 30 Apr 84).....		53
Economic Growth, Energy Production Compared (PRIVREDNI PREGLED, 30 May 84).....		63
Consumption of Primary Sources of Energy (PRIVREDNI PREGLED, 30 May 84).....		67
Payments Problems in Investment Work Done Abroad (PRIVREDNI PREGLED, 17 May 84).....		70
Quota Problem in Border-Zone Trade Discussed (PRIVREDNI PREGLED, 25 May 84).....		73
Implications of Operation of Market Laws Argued (Dimitrije Boarov; NEDELJNE INFORMATIVNE NOVINE, No 1740, 6 May 84).....		76
Republic First Quarter Trade to Convertible Market (M. Urosevic; PRIVREDNI PREGLED, 3 May 84).....		81
Reduction of Economic Branches in Foreign Countries (Sl. Sindolic; PRIVREDNI PREGLED, 8 May 84).....		84
Serbian Economists Assess Large Economic Systems (Lidija Cocaj; PRIVREDNI PREGLED, 8 May 84).....		86
New Capacities in Chemical Industry (BORBA, 3 Apr 84).....		88
Data on Republic Employment 1982 (OPREDELJENJA, No 1, Jan 84).....		89
Farm Income Data Shows Increase in 1983 (EKONOMSKA POLITIKA, 21 May 84).....		90
Agricultural Investments, Social, Private Sectors (M. Urosevic; PRIVREDNI PREGLED, 13 Apr 84).....		92

Data on Corn Production 1951-1982
(GLASNIK POLJOPRIVREDNE PROIZVODNJE, PRERADE I
PLASMANA, No 4, Apr 84)..... 96

Briefs

Unprofitable Plants in Bosnia-Hercegovina	98
Macedonian Nuclear Power Plant	98
Increased Land Purchase	99
Small-Scale Business	99
Barter Trade	100

BULGARIA

REPORT ON BULGARIANS WORKING IN USSR

Sofia OTECHESTVEN FRONT in Bulgarian 17 May 84 p 1

[Article by Kiril Panayotov and Vasil Asparukhov, OTECHESTVEN FRONT correspondents: "A Measure for Tomorrow"]

[Text] During the anniversary year OTECHESTVEN FRONT is starting a new column devoted to Bulgarians working in the USSR -- news about them and news from their native land to them. Problems within the family, information from home towns, from the workers' collectives in Bulgaria; reports about the accomplishments of construction groups and their questions; study and transferral of the leading Soviet experience at numerous sites -- all of this part of the rich topic for this column. It should have as broad a spectrum as the life of the people themselves.

After topics have been specified, we will announce other intentions we might have, among which is organizing a roundtable of the newspaper in Moscow, discussing problems related to the lives and deeds of the Bulgarian builders. Editorial teams will visit the collectives, where our readers will have a chance to share their suggestions, to ask their questions and to help the editors in adequately presenting the heroic deeds of Bulgarian and Soviet builders.

Why do Bulgarians work in the USSR? Over the course of 15 years now, specialists, builders, and workers have left their native land and set off for Stari Oskol, Zheleznogorsk, Gubkin, Tyumen, Orenburg, Pelim, Grozni, Siktivar . . . Look at the map of the sites where Bulgarians work -- it would seem that you are looking at a map of the entire Soviet Union. There are many places where our construction groups work together with their Soviet comrades. It is natural that we ask ourselves what is behind this 15-year experience and that we try to summarize it.

One of the points of support in our journalistic trip was the general party committee in Moscow. They met us in the traditional way here, that is, with tea, but they also helped us to understand phenomena related to the deeds of the Bulgarian workers in the Soviet Union. Here is the statement made by the first secretary of the General Committee of the Bulgarian-Communist Party in Moscow, Encho Moskov, speaking on behalf of the Bulgarian-Soviet Labor University.

"Bulgarian-Soviet friendship has received a new meaning. The spiritual brotherhood between our nations, which has lasted for centuries, is put into concrete action by the Bulgarian specialists who work here. Bulgarians and Russians work together in the brigades. They represent one collective in which everything that happens not only illustrates important principles, but is also a measure for tomorrow.

"Our workers are given an excellent opportunity to study and learn about Soviet leading experience. Thus, by using the most current equipment, technologies, and methods, participating directly in the production process together with their Soviet comrades, and by accepting the moral norms of the Soviet way of life, they mature spiritually. Their labor acquires new dimensions. The difficulties, which undoubtedly exist, mobilize them and they often discover resolute and organizational qualities they often were not aware of. There is a feeling of wholeness, of commonality in the mixed brigades. This is the Bulgarian-Soviet labor university. Here amity, friendship, good fellowship, collective life, even love are born during labor."

We look for generalizations in one area where others look as well. These "others" emit a lot of malevolence; their stones, however, do not touch the fruitful tree of the constantly growing Bulgarian-Soviet friendship. We only mention them because we like their question: Why do Bulgarians work in the Soviet Union? Maybe if we look closely at Encho Moskov's words, we will find an answer which is not expected by our Western "solicitors." This is the Bulgarian-Soviet labor university. Let us try to get more out of these words and reinforce them with solid facts which we have gained from the discussions at the party committee headquarters and at the Main Directorate for Construction of the Bulgarian People's Republic and the Soviet Union.

This year, 500 more workers are leaving or the sites! No one is trying to say that the work is easy. The climatic conditions in some places are very difficult. Then what is it that attracts people? The incentives perhaps? It is well known that they are high. Even very high. Let us look, however, at how the Bulgarian responds to the respect with which he is welcomed.

Bulgarian builders have enormous authority. Bulgarians have performed miracles. The Bulgarians are a strong building class.

More than 800 students study by correspondence, 500 of which are in higher education institutions and 300 in vocational schools. We leave it up to others to interpret, if they may, what else a Bulgarian does when he goes to the Soviet Union.

Every fourth construction worker and engineer in Bulgaria has passed through sites in the Soviet Union.

The situation is really serious, and we begin to understand why our enemies worry. Let us think together: what does this mean? Several years spent constructing sites which have major importance in one of the most developed

countries in the world. Several years shoulder to shoulder with people whose ardor is contagious and whose way of life gives a lot to a person. Let us go back to the figures mentioned above which show how Bulgarians study. And we can add that:

Each year 3,000 technical engineer cadres return from the Soviet Union and pour into national economy. What do the others bring back besides their savings passbooks? This is also an interesting question worth investigating. Perhaps it would be worth mentioning that it has already become a tradition to leave a memorial plaque with names inscribed at each site completed. The Soviet people do this with respect and gratitude. There are now in the Soviet Union over 20 large, representative agencies in cities where the Bulgarian touch is especially noticeable. We are not going to enumerate the buildings, highways, apartment buildings, and other sites, as we are not going to talk about their quality, for which Bulgarians have been given esteem. We would like to mention only one thing -- what else our guys bring back to their country.

At the Bulgarian-Soviet labor university people really learn from one another. The conditions for this are there -- familiar equipment, the level of requirements, which continues to grow, the norms of the socialist community. Why economize with the truth -- about 3,000 builders receive a new training in labor. They return to Bulgaria with a profession acquired, sometimes even two and three in addition. A number of them are prepared to control equipment which is now being adopted. These are reliable cadres.

Technological progress and its stormy rate of development in the Soviet Union is a stream into which the Bulgarian can step. Even more, there is a lot of room to encounter progress in the flooding river of construction life. Take only the fact that at the present time Bulgarian specialists are studying 160 topics of Soviet experience. Among these topics one could find the most advanced technologies in that branch, technologies which we still do not have here. Which other countries would open the doors of their most valuable scientific and technical information to foreign workers?

There is also something else which is difficult to perceive, but which nevertheless exists. It comes from communicating with the Soviet people, from participating in the life of the great Soviet country. People give their greatest evaluation precisely to similar facts and phenomena. Our building detachment in the USSR is conscious of its responsibility. Why speak about it with words when their very work and its results prove that? It is not accidental that workers returning from the Soviet Union turn out to be builders of so many more socialist virtues, knowledge and experience as a result of the labor and spiritual integration which is carried out in their shared existence. The interface of this process has many dimensions, among which is the fact that the number of people who want to work in the Soviet Union increases each year.

12334
CSO: 2200/125

BULGARIA

FULFILLMENT OF TASKS IN AGRICULTURE URGED

Sofia RABOTNICHESKO DELO in Bulgarian 23 May 84 p 1

[Editorial: "Total Mobilization of Efforts in Agriculture!"]

[Text] As a result of the measures taken by the party and the government for improving the management of agriculture and for the most complete use of all resources, preconditions for compensating for a significant part of last year's losses and for the successful fulfillment of the agricultural plan for 1984 are being created. The level of agricultural livestock has been maintained, and the state plan for purchasing livestock production during the last 4 months has been fulfilled. The fall crops are in good shape in most of the okrugs, and with further consistent care they could give a high yield. Despite the delay due to the cool and humid spring, the spring crops were sown with high quality, which created conditions for timely germination and normal trimming of the crops. The conditions for production of more succulent grass fodder were extremely favorable.

At the same time, however, due mostly to subjective reasons, a number of basic and decisive agricultural activities are being neglected. If quick and vigorous measures for total mobilization of efforts are not taken now, there is a danger of missing the favorable conditions which have been created and fulfilling the tasks set for agriculture. This is what was urged by the party-government council on agriculture and forests a week ago, to discuss the present situation and to adopt widespread measures for a total mobilization of all efforts in order to overcome this lag. It was decided that by 20 May the sowing of spring crops should end; the first cutting of alfalfa should be harvested in 7-8 days; transplanting tobacco should end no later than 5 June. Concrete measures were affirmed for total provision of fodder supply, for on-schedule fulfillment of the plan for livestock.

The verifications demonstrated that in a number of okrugs, tight organization and control has been created under the leadership of the party committees and organizations, and agricultural activities are being conducted with good quality, on schedule and in a timely fashion. This is the case, for example, in the Tolbukhin, Razgrad, Plovdiv, Stara Zagora, Ruse, and Pleven okrugs.

In many other okrugs, however, the tasks are not taken on with appropriate persistence, and there has not been a sudden change in the fulfillment of

these tasks. Although the established deadline has expired, the sowing of corn in the Vratsa, Kyustendil, Lovech, Mikhaylovgrad and Sofia okrugs has not been completed. This predetermines the non-fulfillment, even now, of their plans for grain and livestock production.

In many okrugs and agroindustrial complexes, the great importance of tobacco for strengthening the economy and for ensuring self-support of the brigades and agroindustrial complexes has not been sufficiently evaluated. Experience plainly shows that both high-yield and high-quality tobacco are obtained when the ends are pruned in the first days of June. Despite this, however, even after the resolutions of the party-government council, there was no turning point in the transplanting of tobacco. By 21 May, 27.6 percent of the Oriental tobacco had been planted, 38.4 percent of the Virginia tobacco, and 19.5 percent of the Burley tobacco. As one can see, work is still at the very beginning. Whereas the Blagoevgrad, Kurdzhali, Khaskovo, Tolbukhin, Yambol, Plovdiv, Kyustendil, and Razgrad okrugs have created an organization, have included all the people in the fulfillment of this task, and carry out their schedules, the Turgovishte okrug has planted only 20 percent of the areas planned in the schedule; the Varna and Pazardzhik okrugs -- 33 percent; the Mikhaylovgrad okrug -- 46 percent; the Burgas and Shumen okrugs -- 60 percent. These facts speak about nothing more than a difference in approach, a difference in adjustment. Whereas in Tolbukhin and other leading okrugs all the equipment is put to work in shifts and all the labor resources are set to work, the Vidin, Mikhaylovgrad, and Shumen okrugs continue to operate in the old ways and to risk the fulfillment of the tasks. It is evident that decisive measures for an immediate change in the transplanting of tobacco should be taken in these okrugs, under the leadership of the okrug and communal party committees.

Another important task has also been underestimated -- harvesting and making use of alfalfa. The established scheduled time for cutting the first crop within 6-8 days is expiring; however, many okrugs have not yet started the essential activities. Whereas the Plovdiv, Sliven, Yambol, Razgrad, Burgas, Khaskovo, and Vratsa okrugs have established good organization and keep to and overfulfill their plans, in the Vidin and Gabrovo okrugs the schedule is observed at only a 15 percent rate, in the Stara Zagora okrug at 17 percent, and in the Turgovishte okrug at only 12 percent. At such rates of harvesting, there will be no additional cutting, but there is a danger of spoiling the first one as well. The main reason for falling behind here is again the fact that the mowing machines and hay drying machines were not working round the clock. What is more, in the Lovech, Vidin, and Varna okrugs only one third of the hay drying machines are operable.

In most of these okrugs there are not enough measures taken for observing the schedules for the production and purchasing of livestock products. The situation for purchasing sheep in the Burgas, Varna, Veilo Turnovo, Plovdiv, Siliстра, Turgovishte, and Yambol okrugs is most alarming. The burden of tradition is still heavy here; the objective difficulties are put in the background, and sufficient measures to change the situation on the farms are not taken.

All these problems ultimately affect the quality of labor in agriculture. Timely conduct of agricultural activities now, with high quality, is condition number one for ensuring not only more but also a better quality of agricultural production, and higher effectiveness.

The resolutions of the National Party Conference, the instructions of Comrade Todor Zhivkov, and the situation require that a new approach be taken in the organization of activities for the total mobilization of material and labor resources in the villages, for overcoming the lag, for timely and high-quality completion of all agricultural tasks. This means, first, ensuring a continuous, round the clock rate of operation of the equipment and completely mobilizing the efforts of all the agricultural workers, of all employees in administration and enterprises, and wherever necessary -- the workers' collectives at enterprises for seasonal production. Of course, the most stringent measures should be taken against those agroindustrial complexes which do not provide for the most effective use of the labor force available. Second, this means organizing the control of party, state, and economic organs in a new way, transferring it to the fields, around the silos, and the hay drying machines. Third, the new approach requires that the tasks be brought to the attention of workers' collectives in brigades and farms, to each member of the collective, and that the responsibility for timely and high-quality fulfillment of these tasks is raised to an even higher level.

These urgent and important tasks can be successfully resolved only if work in this direction is led by okrug and communal party committees and by the primary party organizations. Now more than ever it is necessary to transfer the political activities to the workers' collectives of the brigades and farms, so that it reaches every person. The example of communists, their daily, persistent good work, their responsibility, and need to be everywhere and in everything, again stands out in the foreground. Party committees and organizations should devote special attention to improving the work of agroindustrial complexes and brigades that fall behind and to observing and controlling their daily work until the tasks are completely fulfilled.

When solving these difficult tasks, the political approach to working should be applied in practice by devoting special attention to increasing the requirements for party and agricultural cadres for a more effective application of the economic leverage of influence. It is also necessary to raise the role of the executive committees at the okrug and communal people's councils, and at agricultural headquarters, which should establish the necessary organization, mobilization, and control for the most complete use of all material and labor resources, for the timely and high-quality execution of agricultural activities.

As was stressed by Comrade Todor Zhivkov, now more than ever agriculture needs accomplishments, and only accomplishments! This is our guarantee of success!

12334

CSO: 2200/125

GERMAN DEMOCRATIC REPUBLIC

STRATEGIES FOR LOWERING ENERGY CONSUMPTION OUTLINED

Leipzig ENERGIEANWENDUNG in German No 2, Mar/Apr 84 pp 39-44

[Article by H. Ziergiebel,* Chamber of Technology: "Priorities in Scientific-Technical Work for the Further Implementation of the Rational Transformation and Use of Energy"]

[Text] 1. Introduction

The basis for the stable dynamic development of the economies of the socialist community of nations and for solving social-economic tasks is broad and constantly expanding development of cooperation, particularly with the USSR, in meeting the economy's established need for fuels, energy and raw materials. A key question in this is the consistent realization of measures to achieve a significant rise in efficiency in the full utilization and conservation of fuels, energy and raw materials.

Tasks in energy rationalization are being solved increasingly through cooperation between the socialist countries of CEMA and on a bilateral basis. Cooperation in this area centers around meeting the growing need for energy- and material-saving equipment, machines and implements to perfect technological processes and to expand the countries' own fuel and energy base. Joint work is being conducted in energy-intensive technologies and in the development of systems to utilize waste heat. For example, the GDR is developing heat reclamation systems for high- and low-temperature ranges, driers for agriculture and industry and is preparing CEMA energy consumption stipulations for energy-intensive systems.

The close interlocking of our economy with the economy of the USSR, which is tangibly reflected in the area of the energy industry, is of inestimable value. Deliveries from the USSR of primary generating station equipment for 500-MW crude lignite units and for nuclear power plants, shipments of energy sources such as petroleum, natural gas, hard coal and hard coal coke to ensure our energy supplies over the long term and to realize the GDR's

* State Secretary Heinz Ziergiebel, head of the Working Group for Rational Utilization of Energy in the Council of Ministers of the GDR.

* Shortened version of the plenary address at the symposium of the GDR and USSR on questions of the energy, material and raw material economies in Minsk 16 October 1983.

refining strategy, all these constitute crucial premises for our stable economic development and cooperation. The GDR is making the greatest efforts to guarantee the maximum mining and refining of crude lignite. This source of energy today meets more than 70 percent of our primary energy needs.

In accordance with the joint economic planning program of CEMA, the primary directions and priorities for energy conservation for the period from 1981 to 1985 were established in the directive of the 10th Congress of the SED and the government's decrees, in order to ensure economic development of the national economy with energy consumption remaining the same or showing an absolute decline. Specific energy consumption from 1981 to 1985 is to be reduced cumulatively by the equivalent of 170 million tons of crude lignite.

As a result of the course which the party and the government has pursued resolutely for many years, rational utilization of energy has developed into a main pillar of our energy policy.

Simultaneously with concrete measures for scientific-technical development and for the creation of the material-technical premises for a decisive reduction in specific energy consumption, a broad system of statutes and regulations has been created and introduced in the area of management, planning and control, which is to ensure the on-schedule realization of the energy conservation measures that have been laid down.

2. The Most Important Results in the Area of Rational Utilization of Energy

Since 1971 the expenditure of primary energy per unit of gross industrial production has been reduced by 40 percent.

Seventy thousand rationalization measures resulted in energy saving equivalent to 120 million tons of crude lignite. The expenditures for them were amortized in each case in an average of 2 years by reducing energy costs. In the 1970's, development of the economy's output and supplying the population were carried out with an annual growth of just under 2 percent for primary energy. In the last 3 years the GDR's primary energy consumption has remained constant. This has contributed substantially to reducing the production consumption of the economy.

This positive balance from the last few years was achieved while making fundamental changes in the structure of primary energy consumption in favor of domestic crude lignite, production of which was increased by more than 20 million tons in the last 3 years.

All the principal tasks for energy economics are determined in advance with the plans. The quality of energy planning, balancing and apportioning as a basic instrument of socialist energy policy was raised substantially. Planning and balancing the consumption of fuels and energy in the combines and factories were designed more stringently by establishing state quotas for energy sources. If the quotas are exceeded, economic sanctions of 10 times the price are imposed.

State energy source allocations are determined taking the measures for energy rationalization and the binding objectives for energy conservation into consideration, and also having regard to a rising use of secondary energy. With state planning stipulations for energy-intensive technological processes and products, the specific energy consumption for more than 70 percent of the energy used in the economy is limited, based on technically determined figures.

The revision of standards and regulations, for example, in the areas of space heating, lighting and transportation, has contributed substantially to energy conservation.

The review of 23 government orders in science and technology directed toward the energy economy and of numerous state planning topics from the 5-year plan for science and technology in the years 1981 to 1985, as well as the coordinated research by the institutes of the combines, the academies and the universities, shows that we have successfully integrated the research potential of our country more deeply into the solution of energy-economic tasks.

Research and development must make the crucial contribution to the energy rationalization of technological processes in our economy and in the development of new products and procedures, with leading numbers in international energy consumption, in order to occupy and determine leading positions in the main currents of energy transformation and utilization.

The tasks which will have to be resolved in the 1980's in the area of energy economics demand qualitatively new methods in the management and planning of energy processes. Following thorough analyses and studies by experts, plans for rationalization and government orders in science and technology were drawn up for the main currents of rational transformation and use of energy and passed by the party leadership and the government. Government orders in science and technology are issued for overlapping areas which determine scientific-technical progress, in order to guarantee their review in joint economic planning by all the institutions involved, including the academies and universities and the broad introduction of their ambitious technical and economic objectives in a short time.

In each case they are managed by a working group of responsible comrades from the institutions involved, with direct responsibility to a deputy minister.

In analysis and in work on energy strategy a successful endeavor has been to consider energy processes in their economic complexity and to create the unity of area-related assignments for the ministries and the territorial organs with the crucial joint cross-sectional energy planning such as electrical energy transformation, space heating, technological heating processes, transportation, and so on.

The precise determination of the cost-benefit ratio is crucial in establishing the hierarchy and sequence of energy-economic measures.

3. The Basic Tasks of Science and Technology in Attaining the Substantial Energy Savings Basic to the Overall Accounting of the Economy

3.1. Energy Transformation Processes

Within the strategy of energy rationalization, these processes represent a significant reservoir of energy conservation. Ninety percent of our primary energy has to be transformed into the necessary usable energy, sometimes several times over.

Consequently, measures to improve the efficiency of our generating and heating plants and also our coal refining plants for briquette and gas production form the focus of rationalization for this product group.

In the GDR more than 80 percent of electrical energy is produced from lignite, whose parameters, with more than 50 percent water content and a high ash content, do not so easily permit a comparison with the economy of a power plant operating on another fuel basis. The programs for energy objectives for power plants until 1985 are based on improvements in efficiency of between 5 and 9 percent.

Scientific-technical measures are concentrating on improving the prewarming of air, enlarging ancillary heating surfaces, reducing flue gas temperatures, using solid electrolyte probes to measure exhaust gases, reducing losses due to leakage in the water-steam circuit, applying modern technologies to keep the heating surfaces clean and controlling the technologies for the treatment and burning of high-ballast crude lignite. To do this, special accommodations will be required from the transportation, crushing and firing systems, in the heating surfaces, exhaust gas tracts and ash removal systems.

With the help of colored startup displays on a 500-MW block in the Jaenschwalde lignite power plant, good results have been achieved in minimizing losses during startup and shutdown. The use of microcomputer-controlled process optimization on 500-MW blocks also confirms that noticeably higher efficiency can be reached in generating electrical energy.

Supplying heat from large condensation power plants in conjunction with compound heat systems is becoming increasingly important with respect to reducing fuel consumption. The consistent use of the heat-energy link through the release of heat from the major lignite and nuclear power plants therefore represents, within the overall strategy to increase the efficiency of transformation processes, a priority task for the scientific-technical steps which form the basis for our plans until 1985 and for our strategy until 1990. The principal tasks for joint planning in electrical energy are summarized in a government order "Increasing Efficiency in Generating Electrical Energy," which also contains the introduction and/or expansion of a computer-controlled distribution of load through the state department of major load distribution, utilizing the advantages of consolidating the Combined Energy Systems of the countries in CEMA. Since the material-economic use of primary energy, as part of the carbon balance of our national economy, is based to a significant extent on our domestic crude lignite, all the questions touching on ensuring

and intensification of the technological level of existing coal upgrading plants in the GDR possess strategic significance for a stable supply of energy.

The measures laid down for rationalization in this area of energy transformation simultaneously provide us additional effects in overall energy conservation.

Scientific-technical assignments are concentrated on:

--the intensification of urban gas production in existing fixed-bed pressure gasification generators, including microprocessor-controlled process optimization,

--the stabilization and optimization of synthetic gas production in Winkler plants,

--increasing energy efficiency in briquetting processes, in which about 100 million tons of crude lignite are used annually, by optimizing drying processes, reducing dust losses, etc.,

--ensuring a high technological quality for the high-temperature coke produced on the basis of our own crude lignite.

3.2 Technological Energy Transformation Processes

These processes represent the absolute priority in the GDR for energy conservation in the period from 1981 to 1985. Since the industrial use of energy takes more than 75 percent of the economy's energy consumption, it is at the focus of our scientific-technical work.

Consideration is given to the results of thorough studies conducted by a group of experts, made up of scientists and men with real-world experience, which were discussed in the Central Commission for Energy and which have resulted in appropriate decrees by the party and the government, including government orders for science and technology.

Priority is being given to the reconstruction and rationalization of the 21,000 industrial furnaces and the installation of modern plant and equipment to reduce energy losses.

In the rationalization steps carried out, it was confirmed that their cost on the average was only one half of the expenditure needed for the production or import of highly refined energy sources.

In addition to the total implementation of technological discipline--the immediate repair of damaged heat insulation and leaky spots, service, maintenance and the full utilization of existing systems for measurement, control and regulation--scientific-technical work is being directed at the continued development of the following pieces of equipment in particular:

- complete burner systems and hearths,
- modern fireproof construction and heat insulation materials,
- compatible measurement, control and regulation systems,
- plants for the optimal use of secondary energy.

High-speed and radiant burners and efficient recuperative burners are being widely installed. The basic equipment also includes freely programmable microelectronic controls with integrated ignition and flame supervision devices.

In the area of fireproof construction and heat insulation materials, we have succeeded in making improvements in the quality of these materials as the result of intensive work. This affects particularly the the development and production of fireproof fiber materials, which are the precondition to a reduction of heat losses, storage heat losses and the consistent implementation of lightweight construction methods.

Additional work is being directed toward the supply of improved readymade materials, of fireproof fibers, slabs and mats for high temperatures and of high-grade lightweight bricks for temperatures of 1,500°C and 1,650°C.

Automated process control was further improved by advances primarily in the area of exhaust gas analysis techniques and temperature measurement techniques.

The use of solid electrolyte probes for exhaust gas analysis and control without downtime, based on titanium and zircon dioxide sensors is resulting in substantial savings in fuel.

Infrared image technology was developed for process monitoring and energy diagnosis. It has already become effective in practice far outside its intended area of application in technological heat processes, for discovering heat losses in residential areas, looking for thermal springs and tasks in environmental protection.

Microelectronic process computers are being increasingly developed and used for the complex task of energy-technological optimization. High-output electric furnaces are being controlled according to the initial materials used and the type of steel to be smelted through precise proportions of energy until casting takes place.

Some induction smelting furnaces and vertical heating furnaces in the metallurgical industry have been equipped in the same way. Testing of similar process control systems on the Siemens-Martin furnaces, which predominate in the GDR, will be carried out soon. A precondition for the use of these systems is a scientific investigation and codification of the individual loss components and interrelationships of processes.

Through university research, precise measurements of the coefficients of emission of fireproof construction and heat insulation materials, of different smelting and heating products, etc., could be taken and catalogued for the first time.

In the GDR process analyses have proven their value in reducing specific energy consumption, particularly in conjunction with industrial furnaces, by determining the points of major losses and deriving ways to reduce these losses.

So far, 50 percent of the amount of energy used in energy processes has been subjected to analysis.

These analyses have reached a high standard primarily in the chemical and metallurgical industries and have contributed substantially to reducing energy consumption.

For example, it has been possible on this basis to bring about a substantial annual increase in production since 1980 in the Leuna Works, always with an absolute reduction in the energy used.

In order to see that the most advanced scientific-technical status is maintained in new plants, or those to be rebuilt, in equipment and in processes, national standards have been created, which determine the maximum permissible energy consumption that must be demonstrated under clearly defined conditions. The long-term orientation of scientific-technical work in the GDR on the rational use of material and energy is primarily toward the development of new technologies and procedures that are low in or free from waste products and waste heat.

More extensive studies on completely new working principles for the coupled exchange of material and energy must be conducted.

The search is under way for new procedures, primarily for basic technical operations, for example, drying, reducing, grinding, separating and joining or compressing, or for the manufacturing methods for mass produced items.

As preparation for decisions based on the national economy, the third statistical survey since 1965 of energy-consuming plants, equipment and processes in the GDR was conducted in 1983.

This comprehensive statistical survey provides data for a long-term strategy of rationalization in all branches of the economy.

3.3 The Use of Technically-Economically Exploitable Secondary Energy

The magnitude of the technically-economically usable secondary energy is about 10 percent of the primary energy consumption of the GDR, representing an important energy potential. The use of secondary energy is an effective step in rationalization to minimize the use of energy, particularly in the case of industrial furnaces.

Primary use of the heat contained in the flue gases of industrial furnaces, which can reach temperatures of 1,700°C, for preheating combustion air, or other components in the process, is the most efficient. For every 100 K of preheated air, there is about a 5-percent saving in fuel.

Our experience shows that in the case of high-temperature waste-heat utilization plants, the return period is normally less than 2 years.

To equip the technological facilities with equipment to utilize waste heat, extensive scientific-technical work is being conducted to increase efficiency and to enlarge the area of application for this equipment with respect to temperature, volume and the aggressiveness of the flow of flue gases.

To use the energy potential in the low-temperature range, the GDR is concentrating on the use of heat pumps, recuperators and regenerators, heat tubes based on the circulation of ammonia and low-temperature heating systems.

Compression heat pumps equalling the scientific-technical state of the art were developed for the performance range between 70 and 2,300 kW.

Small heat pumps are available in a basic selection from 1.6 to 20 kW.

In addition, dehumidification heat pumps are being manufactured with a capacity up to 100 kW.

Work is currently being carried out on the development of an absorption heat pump with an output of 1 MW.

In the community, an important potential for energy exists in using waste heat from refrigeration plants. A comprehensive program has been coordinated with the territorial organs for the conversion of supermarkets and department stores.

Refrigeration plants used in agriculture for cooling milk are also being used increasingly to obtain warm water.

Work is currently going on solutions for the introduction of glass-tube recuperators, systems to use calorific values around the dew point and contact heat transmitters. The basic scientific-technical solution to using the heat potential of the water-steam-dust mixtures that are obtained as vapors during the production of briquets has been developed to a point ready for use and it is currently being introduced to heat apartments and greenhouses.

With respect to regenerative energy sources, the GDR possesses only a low potential because of its geographical situation. In this context, we are studying the use of biogas, of geothermal energy and, in accordance with the given climatic conditions, the indirect use of solar energy.

In the extraction of biogas, work is being conducted on improving the parameters for the process. Experimental plants in agriculture and in communities are being used for this. A solution is being tested to use geothermal

energy to heat residential locations. Heated water is pumped from shafts from 1,500 to 2,000 meters deep. Using its heat content, including return cooling, by means of heat pumps provides an economical solution.

Altogether, the use of secondary energy represents the most efficient method in energy economics to utilize energy rationally. For this reason, an efficiency of 80 percent has been established for currently usable secondary energy in the technical-economic sector for the national economy of the GDR in 1984.

3.4 Space Heating*

Since 1981, based on the appropriate government order in science and technology to make space heating more efficient

--270,000 apartments have been built using improving energy-economic planning solutions,

--70,000 modernized apartments have undergone improvements in heat technology, installing dual-pane windows, improvements in the attic and upgrading the heat insulation by means of silicate plaster insulation and

--all newly constructed apartments have been equipped with central automatic control and night load reduction and the capability for local control.

Central automatic control is being gradually introduced by means of zone and thermostatic adjustment.

The most frequently constructed type of apartment in the GDR, WBS 70, is achieving the highest international figures in heat consumption with 33 to 35 GJ/heat unit.

In the same period improved external designs in heat technology were used in the industry. The use of more than 200,000 m² of radiat slab heating resulted in specific energy savings of about 30 percent. Direct feed of heat supplies, following the example of the city of Erfurt, contributes to a noticeable reduction of costs in investment, material and energy. In addition to the savings of 2.3 kt of steel, 2.6 kt of cement, 150 tons of copper and 50 jobs, a substantial savings in energy was achieved, in relation to the final increase of 180 MW at this location.

This rationalization solution is presently being expanded to another eight construction sites in the republic.

With the gradual increase in the supply of mineral wool insulating materials, a crucial task in energy-economic construction in the GDR consists of applying new technological solutions to improved thermal insulation for the external walls of buildings.

Glass from domestic raw material is finding new prospects as insulating material for the building shell, for glass-concrete compounds and for energy-optimal window construction.

Proceeding from this, our studies in this complex are concentrating on:

- the supply and the use of more heat-efficient outside wall elements, including improvements in thermal insulation for the basement and attic areas,
- reducing the amount of window area and increasing the amount of double-glazing, but also
- making buildings more compact and along with this reducing the outer wall surface in proportion to the building's volume and
- giving consideration to energy economy in new urban planning solutions.

In the systems forming the technical equipment of the building we must:

- tailor the heating system as precisely as possible to the thermal requirements in each case, taking new regulations for calculating thermal requirements into consideration, and avoid overheating individual spaces,
- use low-temperature heat by means of new types of heating surfaces and provide heating systems that conserve even more energy,
- use exhaust air in high-rise apartments, industrial and social buildings and reduce the heat requirements for ventilation even further,
- improve the effectiveness of equipment for measurement, control and regulation by using microelectronics, and make heavier use of thermostatic and zone regulation.

By means of newly developed house hookup stations with outside temperature-dependent regulation, the energy requirements for about 100,000 units of heat have been reduced so far by 10 to 12 percent.

Thermostatic valves are being used in increasing numbers for new building construction and social institutions with central heating.

3.5 Application of Electric Power

As a result of rationalization and new scientific-technical solutions, savings on the order of about 6 percent of the total electric power consumption for 1980 are predicted for 1985 in the application of electric power.

This will affect in particular electric motors, electric heating processes, lighting, domestic electrical appliances and electric space heating.

Studies were conducted by groups of experts on the thrifty use of electric power in all important applications, using primarily new scientific-technical measures to safeguard this objective and the opening up of new reserves.

In the next few years, scientific-technical work in the GDR will be directed to the following priority tasks in the application of electric power:

--in lighting equipment the crucial step will have been taken to conserve electric power, mainly with the expanded production of fluorescent lamps, which give five times the light yield of incandescent lamps while consuming the same amount of power.

This will affect particularly the development of triple-band fluorescent lamps with a light output of about 95 lumens/watt and the gradual replacement of all-purpose incandescent lamps with twin-tube fluorescent lamps for the economy and for consumers in the society.

In order to reduce the consumption of electric power and improve street lighting, high-pressure lamps, metal-vapor lamps and electronically based twilight switches, which equal the scientific-technical state of the art, have been developed.

With electric motors and electric heating processes, we have been successful in reducing power consumption primarily by introducing new electronic power regulating devices such as:

--thyristor rectifiers, particularly for use in D.C. motors in rolling mills, cement works and mine installations,

--D.C. voltage end cells for supplying current to the railroad and

--medium-frequency transformers, with an output up to 1,250 kW for smelting and heating installations.

Research and development work is currently being concentrated increasingly on supplying new power regulating devices (frequency inverters) for three-phase electric motors, which should yield the greatest portion of future energy savings with electric motors, mostly with material flow control (pumps, compressors, ventilating fans, etc.). Examples of applications in the chemical industry, water and district heat supplies brought savings in electric power up to 60 percent. Installing an electronic control system in a railcar on the S-Bahn in Berlin, for example, is reducing energy requirements by about 25 percent.

In order to avoid part-load and no-load operation in electric motors, development work is being focussed on electronic counters and shutdown devices.

About 12 percent of the GDR's electricity consumption is in the domestic area, for energy-intensive household appliances. It has been possible to reduce specific consumption of electricity in washing machines and refrigerators by 10 to 25 percent through new scientific-technical solutions, such as energy-saving programming, new refrigerant compressors and improved insulation.

In order to reduce specific energy consumption still further, improved insulation and modern measuring, control and regulation equipment based on microelectronics are to be supplied in greater amounts. Future research and development work will therefore concentrate principally on the development and installation of microelectronic modules, sensors, electronic temperature regulators, governed motors, water- and energy-conserving armatures, new working principles for preparing food, improving insulation values and the developing of energy-saving detergents.

Measures have been introduced to restrict usage in direct and night-storage electric heating. The measures stipulate that throughout all areas of the economy direct electric heating should be generally replaced and the use of night-storage heating installations should be restricted.

With the new development of a microelectronic control, which can save about 15 percent electricity in each application, binding regulations were approved at the same time which state that this control must be used in night-storage heating installations in the economy and in the social sphere. Future work will concentrate mostly on the removal of oversized direct- and night-storage electric heating installations and reducing electricity consumption for electric heating in technological plants by means of modern measurement, control and regulation equipment. There will be a stronger orientation toward the use of secondary energy, for example, transformer energy to heat apartments and other buildings. On the basis of extensive scientific-technical studies, the requisite research and development tasks for the years ahead have been drawn up to reduce grid losses. Among them are:

- increased involvement of computer programs for economic load distribution in order to optimize grid losses,
- optimal current-kilovar control and
- optimal use of compensation installations among major consumers and compensation related to plant and equipment in the case of transformers, electric motors and lighting equipment.

Modern, microcomputer-based energy monitoring and control equipment is under development to provide increased monitoring and control of electricity consumption in the factories and social institutions.

3.6 Transportation

Fifteen percent of utility energy used in the GDR, or two-thirds of the diesel fuel, is needed for transportation. We see the following priorities in scientific-technical work to reduce energy consumption:

- In freight traffic, transportation costs must be minimized and an energy-optimal division of labor between the transportation organizations must be brought about.

--Diesel traction will be restricted and electrification will be speeded up on the railroad.

--In the case of liquid fuels, specific consumption is to be lowered through the development of energy-effective powerplants and through additional measures to reduce consumption, applied to both vehicles and roadways.

Scientifically precise calculations for optimization, as well as the avoidance of all unnecessary expense by means of rules governing performance and initiatives for competition, form the basis for minimizing transportation costs. A series of models and programs is being applied for the most favorable design of bulk cargo transportation and for distribution in wholesale and retail trade. Additional scientific-technical work is aimed at enlarging the supply of transportation models, including computer programs, for the most diversified tasks. More closed transportation chains are also to be created. Thorough preparation and modelling should also make it possible to derive further savings from coordination between the railroad, works transport and public transportation.

Our strategy in the area of transportation is based on giving precedence to developing the output of the energy-advantageous branches of transportation, railroad and inland shipping. The scientific-technical measures have been introduced for the broad extension of container transportation and for the expansion of the railroad's offerings in transporting general freight, refrigerated freight and express freight. Intensive work is being carried out to increase the efficiency of construction and assembly technologies to speed up the continuing electrification of the railroad.

In the case of liquid fuels, decreased rates of specific consumption are anticipated on the average in the economy for the next few years, while absolute demand rises because of the increase in motorized transportation among the population. The government order "Fuel-Saving Propulsion Systems" has been issued for scientific-technical work.

Application within the framework of previously developed methods of rationalization, such as automatic speed governors, on-board microcomputers for railcars and ships and air intake systems for trucks, is being pushed ahead energetically.

The obligatory periodic adjustment of carburetor, ignition and injection systems can be carried out without the need for additional personnel following the creation of the measuring equipment to accomplish this task. Technical diagnostics for trucks and passenger cars is to be expanded by the further development of diagnostic systems to increase the information readout while shortening the test time per vehicle. By this means, a considerable effect will be exercised on the attainment of good consumption indicators.

Additional scientific-technical tasks are the development of fully electronic ignition systems for gasoline engines, electronic devices for idle and overrun shutdown, fully electronic trip recorders and multigrade engine oils.

In addition, the broad application of liquid gas and the development of gas engines powered by natural gas is anticipated. The network of microcomputer-controlled traffic control equipment is gradually being expanded to provide a smooth flow of traffic.

4. Concluding Remarks

The results achieved so far by the GDR in the area of the rational application of energy can be attributed immediately to the fact that the party leadership and the government put questions of rational energy application in the center of attention to increase energy economy, in accordance with the economic strategy determined at the 10th SED party conference.

If this course, which characterizes the rational application of energy in the GDR, consistent with the basic orientation in CEMA of developing joint fuel and energy sources as the principal direction toward ensuring energy for the development of our output, is followed consistently, it will provide us with a guarantee that even better results can be achieved in future, in close cooperation with the USSR and the other CEMA countries.

9581
CSO: 2300/510

GERMAN DEMOCRATIC REPUBLIC

NEW CURRICULA, TRENDS IN VOCATIONAL TRAINING ANNOUNCED

Bonn IWE TAGESDIENST in German No 77, 26 May 84 pp 1-2

[Unsigned article: "Fundamental Changes in the Vocational Training of the GDR"]

[Text] New Curricula and New Occupations - In Future Two Types of Vocation - Discipline and Creativity To Be Emphasized

Profound changes will occur in GDR vocational training in the coming years. According to a plan of operations adopted late last year by the SED Politburo and the GDR Council of Ministers, all vocational training is to be geared to the needs of the future. Bodo Weidemann, state secretary for vocational education, provided details in a speech. He said that the planned changes in substance, and so on, are to make it possible "for a class conscious and flexibly employable young skilled worker generation to be available in the second half of the 1980's and for the coming decades in all sectors of the economy, meeting the demands of present and future challenges and able flexibly to respond to changing job demands."

New curricula are to be prepared for all 317 skilled worker occupations in the GDR. At the same time the authorities envisage "to create some new occupations and change some job descriptions." According to State Secretary Weidemann, the "earlier proven and broad ranging occupations" are to be turned into so-called basic occupations. "Only two types of skilled worker occupations will survive": Those with a vocational specialization and basic occupations with several specialization emphases. This is supposed to facilitate the desired flexibility and mobility of skilled workers.

The knowledge, skills and behavior of the future skilled workers are to be "more precisely" defined in the new curricula. As Weidemann explained, the mastery of modern equipment and modern technologies requires the "permanent imprint of such behavioral and personality features as discipline, feelings of responsibility, reliability and also creativity, creative thought and action." Training for order and discipline, responsibility and independent action must "be given a new emphasis beginning with the curriculum."

The introduction of the new curricula is to begin from 1 September 1986. One year later, some 75 percent of apprentices, especially in occupations important to the economy, are to be taught in accordance with the new curricula.

The new decree on skilled worker occupations and their systematization is to be completed in 1985. From September 1984 on, a new standardized basic subject will be introduced, "bases of automation." This will emphasize microelectronics and their application in the information and automation processes of the national economy. Thirtysix of a total of 108 lessons in this subject are to be given as experimental instruction and geared to specific occupations and enterprises.

The military education of apprentices will not be cut. The state secretary stressed that the young people are growing up in an age of the "most serious threat to peace." This would have to be brought to their attention constantly "including the inescapable corollary for the need to militarily strengthen" the GDR. The young people's combat readiness and skills must therefore be steadily reinforced. The programs for premilitary training of male apprentices and first aid training of female apprentices, introduced on 1 September 1982, needed "to be fully implemented as an element of vocational training."

11698
CSO: 2300/522

GERMAN DEMOCRATIC REPUBLIC

BRIEFS

AUTOMATION CAUSES WAGE INCREASES--The East Berlin journal SOZIALISTISCHE ARBEITSWISSENSCHAFT [Socialist Labor Science] called on GDR enterprises to exercise more restraint in reclassifying production workers into higher wage groups in the wake of the automation of production processes. They should be "extremely cautious" in evaluating new requirements since each higher classification could conceivably entail a higher wage group. In some cases "glaring contradictions" between classifications and the actually required work performance have been observed. The journal disagreed with the view that increasing automation of production raises the demands made on the production worker in every case. The level of required skills does not automatically increase along with the degree of complexity of the working tools and subject of labor, but rather depends significantly on the level of technology, division of labor, especially on the work processes to be carried out. The demands on the worker were even lowered as a result of automation unless the whole production process was automated and controlled by a small number of workers with an extraordinarily high degree of versatility. [Text] [Bonn IWE WIRTSCHAFTSDIENST in German No 15, 20 Apr 84 p 1]

PRACTICAL SOLUTIONS FROM CHEMISTRY--Professor G. Keil, chief, Research Area Chemistry, Academy of Sciences of the GDR, exhorted chemists to contribute in greater measure to the solution of the GDR's raw materials problem and in particular to develop substances with new, much greater use characteristics. In this connection, Keil termed the use of the 1.4 billion tons of saliniferous lignite in the Halle-Leipzig area, which because of its high salt content is "of only limited usefulness," as absolutely necessary. Processes had to be developed through which the salt content could be significantly lowered. All in all, the chemical sciences had to direct their future work, especially in basic research, more towards gaining materials and systems data which could be used as bases for process and procedure design. The intelligent application of this knowledge demands in a way a more broadly comprehensive manner of thought which "until now has not been self-evident by any means." [Text] [Bonn IWE WIRTSCHAFTSDIENST in German No 15, 20 Apr 84 p 2]

CSO: 2300/527

HUNGARY

BRIEFS

NEW COAL FIELD--Extraction of coal has begun in a new field near the Fekete Valley plant of the Borsod Coal Mines. A field of about 8 million tons of high quality coal is now linked to the existing mine. Thus they save the burdensome expense of developing a transport network. The exploitation of the new coal fields already secures the accomplishment of the goals of the next 5-year plan. [Text] [Budapest ESTI HIRLAP in Hungarian 7 Jun 84 p 4]

CSO: 2500/388

POLAND

DAIRY PRICE DROP CITED TO DISCOUNT ANTIREFORM 'DEMAGOGUERY'

Office of Prices Ruling

Warsaw RZECZPOSPOLITA in Polish 26-27 May 84 pp 1, 2

[Text] During the course of the public debate on the underlying premises of the January rise in prices charged for staple foodstuffs general endorsement was given to the principle recommended by the Office of Prices calling for seasonal adjustments in the retail prices charged for milk and some milk products that correspond to changes in the level of milk supplies.

Accordingly, on 1 June the Office of Prices ordered a seasonal cut in the retail prices charged for milk, cheeses and cottage cheese.

The price of homogenized milk (2-percent fat content) was cut by Zl 1 per liter, and the price of whole milk (3.2-percent fat content) was cut by Zl 2 per liter.

The prices of cheeses and cottage cheese are to be cut by approximately 10 percent.

At the same time, the Office of Prices advises that, in keeping with the long-standing practice, summer season milk procurement prices will go into effect on 1 June.

Laws of the Marketplace

Warsaw RZECZPOSPOLITA in Polish 26-27 Jun 84 p 2

[Editorial commentary by T.B.]

[Text] Opponents of the economic reform like to resort to the demagogic claim that the reform is somehow "inflationary." In their opinion, the abandonment of the rigid pricing policies enforced in the past is tantamount to nothing less than giving free rein to a rampant rise in prices. What is worse, influenced by various kinds of irresponsible statements and actions on the part of forces antagonistic to the new rules governing the way our economy is run, this point of view has gained a great deal of support in that segment of society which is not able to comprehend the complex machinery used to run our economy.

The level of public economic education in Poland continues to be much lower than it is in most other European countries, and this is why the demagoguery of those who pass themselves off as "defenders of the working people" is falling on such fertile ground.

In spite of what the enemies of the reform may say, prices are not a subjective frame of reference dependent on the good will or also the ill will of the powers that be. The level of prices is a direct result of the level of supply, that is, a corollary of the amount of goods offered for sale and the level of demand as measured both in terms of the desire to purchase a given product and also in terms of the ability to pay the price demanded by the producer. The ruling of the Office of Prices on the seasonal reduction of retail prices charged for milk and some milk products, in addition to the other various kinds of seasonal price adjustments which we have witnessed lately, attest to the truth of this fact, a fact which is obvious to anyone who is familiar with the rudimentary principles of economics. The simple fact of the matter is that an increase in supply leads to a situation in which prices have to be cut, since, otherwise, there will be no increase in demand and goods will wind up sitting on store shelves. This same principle applied to the inevitable rise in the prices of those goods which suddenly disappeared from the stores, goods which served only to enrich hoarders and profiteers.

Economics is not an easy subject to master, especially so when society as a whole is required to take up the study of this subject. However, the easiest way to comprehend economics is by looking at concrete examples of how its principles work. And the current situation in our country's marketplace, which is slowly being transformed into a true marketplace one that responds flexibly to changes in the levels of supply and demand, might in fact serve as one such example.

CSO: 2600/1001

POLAND

BRIEFS

COPPER PRODUCTION--Miners working for the Legnica-Glogow Copper Mining District produced more than 2.5 million tons of copper ore during May and, thus, surpassed the plan target by nearly 7 percent. The mines of the Copper Mining and Metallurgy Combine are being worked more productively than they were a year ago. Over the first 5 months of this year 12,412,000 tons of ore have been mined, that is, 4.4 percent more than during the same period last year. During this same period workers in the combine's mills turned out 155,618 tons of electrolytic copper. This amounts to a 5-percent increase in output in relation to the same period last year. Copper export sales to West European countries are up by more than 18 percent over last year. [Text] [Warsaw TRYBUNA LUDU in Polish 5 Jun 84 p 1]

NEW GENERATING CAPACITY--Startup work now under way on the number four 360 megawatt generating unit at the "Belchatow" power plant has already entered a critical phase. The unit's large boiler was fired up a few days ago. It is expected that the commissioning of the number four Belchatow generating unit and its synchronization with the national power grid will be completed by the end of June. [Text] [Warsaw ZYCIE WARSZAWY in Polish 5 Jun 84 p 2]

CSO: 2600/1022

PROGRAM FOR IMPROVING QUALITY, REDUCING ENERGY CONSUMPTION

Bucharest BULETINUL OFICIAL in Romanian Part I No 26, 27 Mar 84 pp 1-12

Decision of the Grand National Assembly Referring to the Program Regarding the Improvement of the Technical and Qualitative Level of Products, the Reduction of the Consumption of Raw Materials, Fuel and Energy and the Better Utilization of Raw Materials and Supplies in the 1983-1985 Period and up to 1990

Text The Grand National Assembly of the Socialist Republic of Romania, debating the Program Regarding the Improvement of the Technical and Qualitative Level of Products, the Reduction of the Consumption of Raw Materials, Fuel and Energy and the Better Utilization of Raw Materials and Supplies in the 1983-1985 Period and up to 1990, drawn up on the initiative and under the direct guidance of the secretary general of the party and chairman of the Socialist Republic of Romania, Comrade Nicolae Ceausescu, judges that the fulfillment of the provisions of this program will make a decisive contribution to the continual growth of the quality and competitiveness of products and to the accentuation of the qualitative factors in the development of the national economy.

The application of the provisions of the program will lead to the general improvement of the qualitative level of products, the reduction of the specific consumptions of raw materials, energy, fuel and supplies, the better utilization of all raw materials and supplies, the expansion of mechanization and automation in all industrial branches, the reduction of production expenses and, on this basis, the obtaining of higher economic efficiency in all economic activity.

In view of the significance and necessity of consistently implementing the measures contained in the program, the Grand National Assembly of the Socialist Republic of Romania decides:

1. The Program Regarding the Improvement of the Technical and Qualitative Level of Products, the Reduction of the Consumption of Raw Materials, Fuel and Energy and the Better Utilization of Raw Materials and Supplies in the 1983-1985 Period and up to 1990 is approved.
2. The centrals, enterprises, scientific-research, technological-engineering and design units and all socialist units are responsible for the raising of the technical and qualitative level of production, the assimilation of new products

and technologies and the modernization of existing ones, and the strict observance of the consumption rates set, securing the better utilization of raw materials, supplies, fuel and energy, the reduction of manufacturing costs and, in particular, material expenditures, the achievement of highly competitive goods for exportation, and the raising of the efficiency of all economic activity.

3. The collective leadership bodies of the socialist units, the working people's councils, the general assemblies and each working person are responsible for rigorously fulfilling the tasks that devolve upon them from the program and for establishing a climate of great collective and individual exactingness in the strict observance of technological discipline, labor discipline and order.

4. The Council of Ministers will take steps so that the ministries, centrals, enterprises and scientific-research, technological-engineering and design institutes secure in all subordinate units the use of the technical-material base and the work force at a higher level and with maximum efficiency, the improvement of the organization and the strengthening of the responsibility in the exercise of technical quality control, and the intensification of the activity of raising the professional skill of the workers, foremen and engineers, with a view to generally improving the technical and qualitative level of production, reducing the consumption of raw materials, fuel, energy and supplies, better utilizing all resources, reducing production expenses and, on this basis, obtaining high economic efficiency.

5. The specialized standing committees of the Grand National Assembly will oversee and report periodically to the State Council about the way in which the government, ministries and central and local bodies fulfill the obligations that devolve upon them in steadily implementing the provisions of the Program Regarding the Improvement of the Technical and Qualitative Level of Products, the Reduction of the Consumption of Raw Materials, Fuel and Energy and the Better Utilization of Raw Materials and Supplies in the 1983-1985 Period and up to 1990.

This decision was adopted by the Grand National Assembly in the session of 24 March 1984.

Chairman
of the Grand National Assembly,
Nicolae Giosan

Bucharest, 24 March 1984.
No 2.

Program

Regarding the Improvement of the Technical and Qualitative Level of Products, the Reduction of the Consumption of Raw Materials, Fuel and Energy and the Better Utilization of Raw Materials and Supplies in the 1983-1985 Period and up to 1990

In our party's view, the raising of the technical and qualitative level of production by applying the newest gains of science and technology constitutes an

essential condition for creating a modern, highly productive and efficient economy.

Stressing the particular importance that this matter represents, Comrade Nicolae Ceausescu, secretary general of the party and chairman of the republic, stated that "under the present international economic circumstances, when we must deal both with the difficulties related to the economic crisis and with very active competition, it is necessary for us to do everything so that Romanian products can be competitive with, can match--from a viewpoint of quality and technical level--any similar product on international plane...."

The present Program Regarding the Improvement of the Technical and Qualitative Level of Products, the Reduction of the Consumption of Raw Materials, Fuel and Energy and the Better Utilization of Raw Materials and Supplies, drawn up on the initiative and under the direct guidance of the secretary general of the party, Comrade Nicolae Ceausescu, starts from the decisions of the 12th congress and the national conference of the party.

The program is based on the fundamental orientations and the instructions of the secretary general of the party with regard to the improvement of the technical and construction characteristics of products and the improvement of the manufacturing structures, which would lead to the substantial growth of the degree of utilization of raw materials and the reduction of material expenditures and to the growth of the efficiency of production and the growth of the competitiveness of Romanian goods on foreign markets. The problems of quality are approached in a complex, modern view, taking into account both the functional, construction and reliability characteristics of the products and their economic ones--consumptions, productivity, costs, degree of utilization of raw materials, and efficiency in exportation--with quality having to provide a maximum use value under the conditions of minimum expenses.

In accordance with the orientations given by Comrade Nicolae Ceausescu, secretary general of the Romanian Communist Party and chairman of the Socialist Republic of Romania, the program proposes a complex system for providing quality beginning with the activity of research and conception, of design, which must take into account the latest gains of science, engineering and technology on a world plane, in the manufacturing processes of products, for achieving faultless execution, in conformity with the models or technical reference materials, and in operation, for increasing the period of use and reducing the maintenance and repair expenses. In this framework, the introduction of modern methods of analysis is proposed with a view to optimizing the expenditures for quality, for providing it and keeping it at a high world level.

At the same time, there is in view the introduction of quality indicators of the execution of parts, subassemblies, semiproducts and products that would permit the creation of a mechanism for stimulating and for increasing the responsibility of the working people for the quality of production, within the framework of the new pay system.

In the establishment of the directions of action for improving the technical and qualitative level of our products, the recent achievements on a world plane

and the trends that are appearing for the periods that follow, in each field, were taken into account in the program. Due to the very dynamic character of the quality and technical level of products, it is stipulated that as new directions of development of products appear on a world plane, they will be analyzed for assimilation into our country's production, with the program's provisions being updated accordingly.

The measures established for raising the technical and qualitative level of products and better utilizing raw materials and supplies in all sectors are based on the contribution of scientific research and technological development, in accordance with the long-term technological forecasts and programs, drawn up under the direct guidance of Comrade Acad Dr Engr Elena Ceausescu, first vice prime minister of the government and chairman of the National Council for Science and Technology.

A large number of specialists in enterprises, scientific-research and technological-engineering institutes, industrial centrals and ministries, the State Planning Committee, the National Council for Science and Technology, the Ministry of Technical-Material Supply and Control of the Management of Fixed Assets and the State Inspectorate General for Product Quality Control were involved in putting the finishing touches on the program.

I. The Present Situation of the Technical and Qualitative Level of Products

About 11,300 main products and groups of products, especially among those meant for exportation, representing in industry as a whole 76.4 percent of the output in 1983, were analyzed during the work of drawing up the program.

Through the extensive investment programs carried out in the past decade, the value of the productive fixed assets rose more than 2.7-fold in the economy and 2.8-fold in industry. At the end of 1982, about 80 percent of the value of the means of labor had an age of up to 10 years. In the same period, over 7,700 new and improved technologies, with technical and economic parameters similar to those in the advanced countries, were applied in production.

Regarding the considerable technical potential that the national economy has, it is necessary that firm steps be taken in all economic branches to raise the technical and qualitative level of the products, reduce the specific consumptions and increase the competitiveness on foreign markets, in accordance with the efforts made, and to attain the projected parameters at all the capacities put into production.

From the analyses made, it resulted that our country is now achieving a number of products with a high technical level, competitive on foreign markets, such as: tractors, bearings, some technological equipment, hydraulic pumps and installations, high-capacity excavators, ship engines, aircraft, seagoing ships, equipment for data processing and for automatic control of industrial products, electronic automatic telephone exchanges, types of electric motors, electroerosive metalworking machines, processing centers with numerical control; assortments of plate and rolled sections of steel, rolled nonferrous metals; low- and high-density polyethylene, some pharmaceutical and medicinal substances,

synthetic threads and fibers, phenol, acetone; stoneware tile, cement assortments, types of wooden furniture and of wooden musical instruments, articles and boats for sports and recreation; assortments of cloth, garments and knitwear, footwear, carpets, enameled vessels of plate, assortments of household glassware, ornamental objects of porcelain; some food products.

In addition, from the analysis it resulted that there are under manufacture products that are not on a par with similar ones on a world plane, on which, with priority, it is necessary to concentrate the efforts to substantially improve the technical and functional parameters, which would permit the widening of our country's possibilities of exportation.

II. The Objectives of the Program

On the basis of the instructions of Comrade Nicolae Ceausescu, secretary general of the party and chairman of the republic, the following objectives scheduled for the period up to 1985, in 1986-1987 and in the next stage up to 1990 are taken into account in the Program Regarding the Improvement of the Technical and Qualitative Level of Products, the Reduction of the Consumption of Raw Materials, Fuel and Energy and the Better Utilization of Raw Materials and Supplies:

1. The general improvement of the technical and qualitative level of products through the intensification of the work of redesigning and modernizing the products under current manufacture, the improvement of the conception of those under assimilation and the expansion of the manufacturing assortment through the assimilation of highly technical products, so that the percentage of products at a high world level rises to about 69 percent in 1985 and 84.6 percent in 1987 and approaches 95 percent in 1990. In addition, between 2 and 5 percent of the products would be above the level attained on a world plane.

In this framework, as early as 1984, all products provided for exportation will be at a world level from a qualitative viewpoint, with greater efficiency being provided.

At the same time, the qualitative parameters of products meant for domestic consumption will be improved substantially.

2. The raising of the competitiveness of products for exportation and, in this way, the expansion of the exportation of Romanian products with advanced processing and high efficiency.

A substantial rise in the degree of utilization of raw materials in products meant for exportation will be secured through the measures provided in the program for improving the assortment structure of production and achieving first-rate products with better technical and functional characteristics.

3. The expansion of mechanization and automation in all industrial branches, especially in the sectors with a high volume of labor, in order to provide the levels stipulated in the program for growth in labor productivity. On the average, the percentage of production achieved in a mechanized and automated

system will reach 65 percent in 1985, about 70 percent in 1987 and over 90 percent in 1990.

Automated machines and lines, including industrial robots and microprocessors, will be achieved under conditions of economic efficiency. Their manufacture will be done on the basis of a special program, in conformity with the provisions of the sole national plan.

4. The reduction of the specific consumptions of raw materials, energy, fuel and supplies and of imports, the use of domestic resources of raw materials and supplies on a wider and wider scale, the utilization of our own mineral deposits to a greater extent, the assimilation of new materials that replace imports, the utilization of recovered materials and the expansion of substitutes that provide for growth in the efficiency of production.

5. The better utilization of all raw materials and supplies, so that on the whole, in comparison with 1980, there is a rise in the degree of utilization of them by 29.5 percent in 1985, about 41 percent in 1987 and about 64 percent in 1990.

6. The raising of the efficiency of all economic activity is also reflected in the reduction of the material expenditures per 1,000 lei of industrial commodity output by about 81 lei in 1985, over 93 lei in 1987 and about 133 lei in 1990 in comparison with 1980.

The aggregate of the measures provided in the program must ensure the improvement of the production structures by increasing at a steady rate the assortments with a high degree of technicality and a high percentage of manual labor and work of conception. According to the program, the consumption of raw materials, supplies, fuel and energy will register lower growth than the growth in industrial output.

For attaining the above-mentioned objectives, there will be included in the provisions of the annual and long-term plans the tasks that result from this program, there being specified the levels of the technical and qualitative parameters that must be reached, and the rates of consumption for raw materials, supplies, fuel and energy, with the observance of the degree of growth in their utilization in the production processes and in the reduction of material expenditures.

In this framework, action will be taken in the following main directions in each stage:

In the Period up to 1985

1. Firm measures for attaining the technical, qualitative and economic parameters put in the approved technical documentation at all capacities put into operation will be provided in all industrial units; during 1984, the projected parameters will be attained at the capacities with expired dates, and by the end of 1985, all capacities that were put into operation in 1983 and 1984 will operate at the projected parameters.

2. According to the plan provisions, over 2,200 new and modernized technologies, distributed according to branches as follows, will be applied in production: 440 technologies in the machine-building, electrical-engineering and electronics industry, 109 in the metallurgical industry, 850 in chemistry and petrochemistry, 370 in the construction-materials industry and woodworking, 500 in light industry, over 170 in the food industry, and in other sectors of the economy; new and modernized machines, equipment, installations and apparatus with high technical, qualitative and economic parameters will be assimilated into manufacture; mechanization and automation will be expanded in order to secure the economization of labor in accordance with the program for growth in labor productivity.

3. Quality indicators for products will be applied throughout the economy in order to ensure control over all phases of the manufacturing process and to create a generalized system for increasing the responsibility of the working people for raising the quality of products; modern methods of analysis and monitoring of quality will be applied, especially in the machine-building, electrical-engineering and electronics industry, with a view to making all the necessary tests, including the climatic ones, and for optimizing the production costs and raising the performances to a competitive level on an international plane. The modern methods of quality control will be expanded and steps will be taken to efficiently utilize the test stands and all measurement and control apparatus.

In the 1986-1987 Period

1. The process of modernizing the installations and equipment on hand will be continued with a view to attaining functional parameters that ensure the achievement of products of a suitable quality, with low consumptions of raw materials, supplies, fuel and energy.

2. New technologies will be applied in accordance with the provisions of the sole national plan for economic and social development, with a view to the achievement of higher-quality products and the reduction of the consumption of raw materials, supplies and manual labor and of expenses of any kind; an accent will be put on assimilating into manufacture new and modernized machines, equipment, installations and apparatus and automated technological lines, with parameters at a world level, and the manufacture of products whose performances are above the world level will be undertaken.

3. The generalization of the modern methods of analysis and control of quality in both the design and the manufacture of products will be undertaken.

In the 1988-1990 Period

In this stage, an accent will be put on the processes for modernization of products through the achievement of new machines, equipment, installations and apparatus, the introduction of new technologies and the modernization of existing ones, so that practically all products and technologies would be at a high world level (about 95 percent).

In this framework, peak technologies will be researched and perfected and products will be assimilated which would ensure the continuation of the process of keeping the technical and qualitative level of the products at the highest parameters on a world plane, competitive from an economic viewpoint. Provision will be made, in a manner varying according to branches, so that about 2-5 percent of the products have performances that exceed the level that will be attained on a world plane.

In accordance with the indicated orientations, the program provides significant improvements in both the field of quality and that of growth in the economic efficiency of production. It is thus intended that, at the end of 1985, practically all products that are made in the economy will be, from a technical and qualitative viewpoint, at least at the average level that is now achieved on a world plane, for similar types; as early as 1984, all products meant for exportation will have technical, functional and reliability parameters at a world level. In industry as a whole and according to ministries, the percentage of products at a high world level and over the level attained on a world plane are to have, up to 1990, the following evolution:

Ministry	(in percent)		
	1985	1987	1990
Total,	I	68.7	84.6
including:	II		2-5
Ministry of the Machine Building Industry	I	76	90
	II		2-5
Ministry of the Machine Tool, Electrical	I	66.8	86.0
Engineering and Electronics Industry	II		2-5
Ministry of the Metallurgical Industry	I	84	93
	II		2-5
Ministry of the Chemical Industry	I	70.8	86.0
	II		2-5
Ministry of Wood Industrialization	I	75.3	85.0
and Construction Materials	II		2-5
Ministry of Light Industry	I	70	86
	II		2-5
Ministry of Agriculture and the Food Industry	I	70.4	85.0
	II		2-5

I--a high world level, including: II--over the level attained on a world plane

The economic effects of improving the technical and qualitative level of products and the improvement of the structure of production will have to be reflected in the substantial growth of the efficiency indicators.

a) In the national economy as a whole, the material expenditures are to be cut by 80.9 lei per 1,000 lei of commodity output in 1985, by 98.3 lei in 1987 and by 132.9 lei in 1990 in comparison with 1980.

According to ministries, the cuts are as follows:

Ministry	(lei)		
	1985	1987	1990
Total, including:	-80.9	-98.3	-132.9
Ministry of the Machine Building Industry	-116.4	-147.4	-201.4
Ministry of the Machine Tool, Electrical Engineering and Electronics Industry	-117.7	-146.7	-207.7
Ministry of the Metallurgical Industry	-52.4	-68.4	-100.4
Ministry of the Chemical Industry	-103	-119	-155
Ministry of Wood Industrialization and Construction Materials	-79.1	-89.1	-115.1
Ministry of Light Industry	-97.9	-113.9	-147.9
Ministry of Agricultural and the Food Industry	-77.2	-89.2	-109.2

These cuts are to be concretized in the reduction of the consumption of raw materials, fuel and energy, by redesigning current products and technologies and promoting in manufacture new products and technologies, which would lead to savings of resources, especially electric power, primary energy, ferrous-metallurgical products, inorganic chemical products, petrochemical products, basic macromolecular products, pulp and paper, wood, cloth and so on.

b) The reduction in material and energy consumptions, along with the rise in the unit value of the products through the rise in the technical and qualitative performances of the products, will have to cause significant improvements in the utilization of the material resources of the economy.

The value of the industrial output that will be obtained for each leu spent for the raw materials, supplies, fuel and energy consumed for the respective output will rise as follows:

Ministry	(in percent)		
	1985/1980	1987/1980	1990/1980
Total, including:	129.5	141.2	164.2
Ministry of the Machine Building Industry	150.5	168.4	203.1
Ministry of the Machine Tool, Electrical Engineering and Electronics Industry	130.0	146.4	177.1
Ministry of the Metallurgical Industry	130.3	140.7	162.2
Ministry of the Chemical Industry	132.7	146.5	165.6
Ministry of Wood Industrialization and Construction Materials	125.1	130.8	150.4
Ministry of Light Industry	128.3	138.6	160.8
Ministry of Agriculture and the Food Industry	117.5	127.8	150.8

c) The modernization of products and technologies and the expansion of the manufacture of highly technical assortments will also cause significant increases in the degree of utilization of Romanian products on foreign markets. For products with a high percentage in exportation, mainly due to the rise in

quality and the improvement in the assortment structure, the degree of utilization expressed in valuta will increase substantially.

III. Objectives and Measures for Securing the Stipulated Growth in the Technical and Qualitative Level of Production and the Better Utilization of Raw Materials and Supplies According to the Main Branches and Groups of Products

In order to achieve the tasks for raising the technical and qualitative level and to continually increase the reliability and competitiveness of products according to branches and groups of products, the following orientations will be promoted:

a) In the machine-building industry, the main general indicators regarding quality and the utilization of raw materials, supplies, fuel and energy will be improved as follows:

Category		1985	1987	1990
A. Percentages of the total number of products:				
Products at a high world level, including:	%	76	90	96
Over the level attained on a world plane	%			2-5
B. Growth in the degree of utilization in comparison with 1980	%	150.5	168.4	203.1

Steps will be taken to modernize and redesign the products, securing an increase in the lifespan and operational reliability, a reduction in the weight and specific consumptions, an increase in the outputs and a reduction in the expenditures for operation, maintenance and repairs by users.

It was stipulated that all producers in this branch are to intensify the activity of redesigning, modernization and assimilation of new products into manufacture, so that practically all products that exhibit lags with regard to the achievements on a world plane may be replaced by the end of 1985.

Similar measures will also be applied as regards manufacturing technologies, with 440 new and modernized technologies being introduced by the end of 1985.

At the same time, energetic measures were taken into account for improving the quality in the process of making the products, for strictly following the provisions of the technical documentation and the manufacturing technologies, and for increasing the strictness of the technical control in all phases of the manufacturing processes.

In the 5-year period that follows, the further improvement of the quality of the technical level of the branch's products is to be achieved under the conditions of the wide-scale introduction and promotion of new, highly complex and efficient technologies such as processing by plastic deformation in a magnetic and electric field, the rolling of gearwheel teeth, heat and thermochemical treatments based on concentrated sources of energy--lasers, plasma, electron beams--flexible systems of processing and so on.

The expansion of the manufacturing assortment is in view, especially in the highly technical fields, with high-performance equipment of very high powers and capacities and higher manufacturing precisions and quality classes. The percentage of machines, equipment and installations achieved in families, based on a unitary functional and construction conception and covering the entire range of requirements according to dimensions and purposes for exportation and domestic use, will rise.

For more important products and groups of products, the following improvements can be mentioned:

In the field of the manufacture of equipment and accessories for drilling and extraction of gas and crude oil, by the end of the current 5-year period action will be taken mainly to introduce new technologies and assimilate new materials for making fast-wearing parts that enter into the composition of drilling and extraction installations and tools that function under difficult operating conditions. The construction of the drilling installations will be improved in order to reduce the weight and raise the operational efficiency, by reducing the assembly and transportation time by about 30 percent and increasing the availability from 80 to 90 percent. Special attention will be devoted to increasing the reliability of the drilling bits, for which special materials of high quality (particularly for the slide bearings) and equipment for superfinishing and heat treatments will be provided, so that in 1985 the durability of the bits will be more than 50 percent above the level now attained.

In the 5-year period that follows, the manufacturing range will be expanded with a number of new products of a high level: installations and equipment for very deep drilling; drilling installations, equipment and tools of special construction for working under difficult operating and climatic conditions; deep hydraulic motors for directional drilling, units for separation, collection and transfer of crude oil in a closed system, and so on.

The entire range of power boilers, turbogenerator groups and auxiliary sets will be redesigned by 1985, with a view to substantially raising the outputs and operational reliability, eliminating the interruptions in operation and lowering the maintenance and repair expenses.

For the economization of energy resources, especially hydrocarbons and electric power, the range of installations for recovering all reusable energy resources will be expanded and action will be taken to modernize the power-generating equipment of the consumers with a view to raising the power outputs and replacing high-grade fuel.

New, highly efficient types of power-generating units utilizing domestic resources--boilers burning lignite in a fluidized layer or using bituminous shale, turbines for producing energy from low-potential resources, hydroelectric-power groups for the hydroelectric power stations expected to be achieved in this period, and so on--will be assimilated into manufacture.

In the manufacture of motor vehicles, the modernization expected by 1985 must provide for the growth of the carrying capacity by over 17 percent, of the tare

index from 1.76 to 2 and of the availability index to 77-93 percent and the growth of the period of standardized utilization through the use of high-strength materials for the main components and the expansion of the utilization of substitutes with lower specific weights. The use of motors with greater power, synchronized gearboxes, improved hydraulic suspensions and transistorized drive systems will be undertaken. The technological processes for painting by electrophoresis and the utilization of specialized machines with apparatus for active control will be expanded.

All motor vehicles under current manufacture will be redesigned, modernized or replaced with other types by 1990.

The current types of tractors and agricultural machines will be redesigned as to construction by the end of the current 5-year period in order to increase the power and the durability of the axles and rolling systems, to furnish hydraulic installations of high output and reliability and to reduce fuel consumption, by means of which an increase in the productivity of the work in agriculture and a reduction in the expenses for maintenance and repairs will be secured.

The work of improving and diversifying the equipment for preparing the germinative bed along with applying herbicide and fertilizer to the soil, the combined sets of machines that perform several operations in a single pass, the multi-purpose self-propelled combines for cereals, corn, soybeans, sunflowers, potatoes and so on will be continued.

In shipbuilding, it is necessary to act firmly to assimilate and redesign all ships under current manufacture in order to reduce the deadweight, dimensions and installations, lower fuel consumption and utilize heavy fuel. The raising of the operational reliability and the reduction of the repair time will be pursued.

In the next 5-year period, the manufacturing range will be expanded, especially with specialized ships: bulk carriers of 130,000 deadweight tons, ships for transporting oil gas and ammonia in liquid form, containerships, ships for geological research and prospecting beneath the sea bottom and so on.

In the field of mining equipment, in correlation with the extraction technologies, the raising of the reliability and the dependability in the functioning of the equipment by about 20-30 percent, the raising of the durability of the fast-wearing mechanisms and subassemblies, and the reduction of metal consumption by 10-20 percent will be provided.

A series of new, high-output equipment for mechanizing the work in quarries and galleries (a bucket-wheel excavator, a gallery-digging installation, mechanized shields for advancing in soft rock and in rock of average hardness, mining loaders, families of modulable equipment for performing better the main technological operations underground and so on) and for repairs (equipment for extracting metal from solutions with ion exchangers, magnetohydrodynamic installations for reconcentrating and separating ore, equipment for extracting heavy metals from concentrates with the method of disaggregation under pressure and so on) will be assimilated.

For electric and diesel-electric locomotives, the actions will be oriented toward the achievement of products with a high degree of thyristorization, which would provide for speed control and regenerative electric braking, the use of asynchronous electric traction engines without a commutator, with frequency adjustment, the substantial growth of reliability, and the reduction of energy consumption and repair times.

In the manufacture of machine tools, action will be taken to improve the existing machines and assimilate new types, similar to the best achievements on a world plane, through the equipping of them with electronic speed variators and drive mechanisms, converters, numerical controls, a display of levels, and switching and protective apparatus, which would provide a high degree of precision, and to reduce the repair times, so that in 1985 all machine tools would attain an availability of over 80 percent.

In the next 5-year period, within the production of machine tools, the manufacture of automatic machine tools with numerical controls, with a display of levels and so on, automated and specialized machine tools with a high degree of mechanization, and complete automatic lines for processing, assembly, casting and so on, which would provide for the modernization of the manufacturing technologies and the growth of the labor productivity in the entire branch of machine building, will register constant development.

Special attention will be devoted to the production of machines and equipment with high technical parameters for light industry--spinning machines with special effects, rotor spinning machines, lines for nonwoven products, wool-carbonizing installations, lines for washing, bleaching, dyeing and continuous drying, cotton cards, unconventional weaving machines, equipment with a high degree of automation, which would provide for the higher processing of raw materials and their substitutes, the utilization of recoverable and reusable raw materials, the achievement of higher productivities and low energy consumption, and the growth of the competitiveness of the products made.

b) In the electrical-engineering and electronics industry, the following evolution is expected for the main indicators of efficiency and utilization:

Category		1985	1987	1990
A. Percentages of the total number of products:				
Products at a high world level, including:	%	66.8	86	96
Over the level attained on a world plane	%			2-5
B. Growth in the degree of utilization in comparison with 1980	%	130.0	146.4	177.1

In this branch, which is further registering priority development, it will be necessary, in the next 2-3 years, to act to achieve the substantial improvement of the quality and technicality of the products to the level of similar products that are made in the advanced countries and to ensure that, in the next 5-year period, practically all products keep pace with the rapid rate of innovation and renovation that characterizes this field.

At the same time, action will be taken to improve and modernize the production structures by creating or developing new, highly technical and complex sectors such as microelectronics, industrial robots, equipment for nuclear-electric power stations, for new forms of energy, for aviation and so on. Steps will also be taken to redesign and assimilate miniaturized products with a low consumption of copper, precious metals and siliceous plate, achieved in construction variants that also respond to special climatic requirements.

For the main products and groups of products, the following improvements are in view:

In the construction of electric machines, the growth of the power per unit of weight through the achievement of housings in a welded construction, the expansion of the series of motors in aluminum housings, the growth of the range of rotor-disk motors, and the further reduction of copper consumption will be pursued.

In the next 5-year period, the manufacture of special motors will be expanded in order to completely provide for the fields of operation under special conditions (explosive media, gassiness, under the influence of nuclear radiation, at extreme temperatures and so on).

In the field of the manufacture of electric, telephone and signal cables, the wide expansion of the utilization of aluminum and better plastic and rubber insulation that would permit operation at high temperatures and the elimination of reinforcement with steel wire will be pursued.

For electric machines and apparatus for home use, action will be taken to modernize production especially from the viewpoint of improving the energy outputs. The entire range of electrical-heating products will be redesigned with a view to transmitting heat as efficiently as possible, and new series of motor compressors that permit the achievement of refrigerators with minimum consumptions of electric power and with higher performances will be assimilated.

In the production of high-voltage apparatus, it is necessary to redesign the medium-voltage switches with little oil and the measuring transformers of over 72.5 kilovolts and to assimilate new series of charge separators and starting rheostats; for all high-voltage apparatus, the technique of insulation and commutation, in sulfur hexachloride, will be developed.

In the production of electronic components, throughout this period the accent must be put on organizing and developing the production of microelectronics, on assimilating peak technologies that permit the transition to the manufacture of microprocessors. At the same time, within the production of discrete active and passive components, highly reliable power assortments with high performances will be developed.

In the manufacture of televisions, radios and radio cassette players, steps will be taken to increase the use of integrated circuits and reduce energy consumption, to diversify color televisions and to expand the range of radios and radio cassette players with new types of stereo playback and recording systems, with an expanded number of reception bands and higher powers.

c) In the metallurgical industry, the main general indicators regarding the quality of the products and the utilization of raw materials, supplies, fuel and energy will be improved as follows:

Category		1985	1987	1990
A. Percentages of the total number of products:				
Products at a high world level, including:	%	84	93	98
Over the level attained on a world plane	%			2-5
B. Growth in the degree of utilization in comparison with 1980	%	130.3	140.7	162.2

In view of the new trends, confirmed by research and development on a world plane, wide-scale renovation and modernization of the manufacturing technologies, with profound implications for the quality, structure and economic efficiency of production, are planned in this branch.

In this framework, the new technologies are to permit the preparation, under efficient conditions, of special alloys necessary to modern industry, including high-grade alloy, stainless and heat-resistant steels, high-purity aluminum alloys and so on. The reduction of energy consumption, especially by integrating the phases with high temperatures, so as to obtain better energy utilization in the primary processes and the recycling of recoverable resources, constitutes a priority objective of these technologies.

The growth of the degree of automation of the ferrous-metallurgical processes, to which special importance will be accorded in view of the implications for quality and labor productivity, is expected to be achieved especially by implementing the modern, automated means of management.

In the stage up to 1985, the efforts will be oriented particularly toward equipping the production lines with installations and means for active control of the products in all phases of manufacturing that provide for automatic adjustment of the technological parameters within the limits necessary to obtain high-quality products. In addition, substantial improvements in organizing and performing the activity of repairs and maintenance on the installations and equipment by promoting the work of preventive maintenance and meeting the entire need for spare parts and subassemblies, which would permit continuity in operating the installations, are in view in this first stage.

Under these conditions, along with the expansion of the assortment in the manufacture of ferrous-metallurgical products in the highly technical fields, important improvements regarding the qualitative level of the respective products, materialized in the obtaining of better mechanical and technological characteristics, in the homogeneity of the chemical composition and the reduction of the amount of harmful elements and in the high degree of finishing and dimensional precision, are also expected.

For more important products and groups of products, the following improvements can be mentioned:

For blast-furnace coke, provision has been made for the raising of the efficiency of production, by optimizing the systems for heating the coking batteries, by turning to preheating of the coking charges--with effects on fuel consumption--by introducing new equipment and technologies for advanced separation of the chemical compounds in the tar from the coke plants, and so on.

For crude iron, as early as the current 5-year period, the reduction of the amount of sulfur to less than 0.002 percent will be secured through partial replacement of limestone with dolomite and desulfurization outside the blast furnace. The perfecting of the technology of injecting into the blast furnace reducing gases obtained from coal gasification is in view for the end of the next 5-year period.

For steel, the qualitative improvements provided for the first stage--1985-- will be achieved under the conditions of reducing the consumption of alloying elements, by increasing the percentage of high-grade carbon steel, low-alloy steel and microalloy steel with boron and titanium. The expansion of the procedures of degassing in a vacuum and decarburization with oxygen in an argon medium is in view for increasing the chemical purity.

For graphite electrodes, the growth in the operational durability is to be provided especially by applying the technology of impregnation and expanding the utilization of acicular coke.

For products of metallurgical processing, in the immediately following period action will be taken especially to provide constancy to the mechanical and technological characteristics, to obtain optimum metallographic structures and to raise the degree of finishing and dimensional precision. The controlled cooling of the rolling mills, the procedure of annealing by spheroidizing, and the processing of steel by broach and hot-drawing will be expanded.

In the development of the production in this field in the next 5-year period, a continually rising percentage will consist of highly technical products such as: new types of thick plates of heat-treated high-strength structural welding steel; special bars and plates for the chemical, nuclear and aeronautical industries; electrotechnical strips with very high magnetic permeability, full finished rolled metal achieved in a continuous flow, electrolytically tinned plate and so on.

At the same time, the expansion of the utilization of the unconventional heat-treatment technologies and of the facilities needed for increasing in 1990 the percentage of heat-treated ferrous-metallurgical products is expected.

d) In the chemical industry, the main general indicators regarding the technical and qualitative level of production are as follows:

Category		1985	1987	1990
A. Percentages of the total number of products:				
Products at a high world level, including:	%	70.8	86	96
Over the level attained on a world plane	%			2-5
B. Growth in the degree of utilization in comparison with 1980	%	132.7	146.4	165.6

In this branch, by the end of the current 5-year period, action will be taken especially to raise the qualitative parameters to the level of similar products on a world plane, to reduce the amount of impurities to the limit allowed by international standards and to raise the percentage of higher quality in the total output. To this end, there is in view the raising of the degree of operational reliability of the installations and the degree of stability of the parameters of the technological processes by doing the repair and maintenance work on time and with quality and by supplying measurement, control and self-regulating apparatus for all phases of manufacturing.

The efforts to perfect the technologies with a view to improving the qualitative parameters of the products and to reduce the consumption of energy and raw materials, especially at the factories for ammonia, sodium products, synthetic rubber, plastic and so on, will continue in the 1986-1990 5-year period. The devising of chemical and biochemical procedures for harnessing new sources of raw materials and supplies for the chemical industry constitutes a highly important objective.

Special attention will be given to using waste materials, byproducts and used products from the field of rubber, plastic, petroleum, inorganic and nonferrous-metal products and ones resulting from the purification of used water.

At the same time, the efforts will be concentrated on assimilating into manufacture new products that meet the economy's needs, especially in the field of medicines, dyes, auxiliary products, insecticide, intermediates for polyurethane resins, and extrapure substances and materials for the electronics industry. For more important products, the following improvements are expected:

In the chemical-fertilizer industry, action will be taken to increase the mechanical resistance of the granules in order to lessen the powdering of the fertilizer and the tendency to cake.

Along the line of improving the structures, liquid fertilizer and combined fertilizer with microelements (sulfur, magnesium, boron, zinc, iron and so on) will be promoted, with a view to the expansion of exportation.

In the future, the efforts will be oriented toward improving the existing installations in order to cut energy consumption and toward achieving more active synthesis catalysts for raising the yields in the ammonia installations.

In the field of macromolecular products and synthetic rubber, constancy in the basic characteristics (degree of polymerization, plasticity, resistance to wear

and breaking) and the achievement of improved assortments, resistant within wider temperature limits, to ultraviolet rays and in corrosive media, will be secured.

To this end, as early as the current 5-year period, steps will be taken to improve the polystyrene-manufacturing technology and to develop with priority the production of polyvinyl chloride in assortments meant for the manufacture of high-voltage electric cables, food containers and high-quality leather substitutes. New assortments of polyethylene for the insulation of electric cables, fireproofed polypropylene and urea-formaldehyde resins with a low amount of formalin will be assimilated; action will be taken to increase the activity of the catalysts and initiators of reactions.

In the rubber- and plastic-processing industry, steps will be taken to increase the duration of use of tires and technical articles as early as 1985.

The manufacturing assortment will be expanded substantially in the next 5-year period through the assimilation of highly technical assortments: various rubber articles for special uses and new types of tires of special construction for tractors, agricultural machines, high-capacity motor vehicles and so on.

In the medicine sector, the efforts must be oriented toward using the resources of medicinal plants and bee and animal extracts and toward strongly developing the higher-quality products of biosynthesis and fine synthesis.

In the next 5-year period, special attention will be given to assimilating better assortments of antibiotics, sulfamides, cytostatics, and odorant products for cosmetics.

At the same time, steps will be taken to modernize the manufacturing technologies for a large number of medicines.

In the lacquer, paint, dye and organic-pigment industry, action will be taken to perfect and promote a wide range of new assortments with higher qualities achieved on the basis of domestic synthetic raw materials that replace scarce or imported raw materials to as great a degree as possible. In this framework, the chemical sector of fine synthesis, which must provide the entire range of organic pigments and dyes needed for the lacquer and paint industry, including for light industry, will make a special contribution.

Steps will be taken to achieve, after 1985, assortments of lacquers and paints for anticorrosive protection that have higher qualities than those now made.

e) In the construction-materials and wood-processing branch, the main general indicators regarding the technical and qualitative level of production will evolve as follows:

Category		1985	1987	1990
A. Percentages of the total number of products:				
Products on a high world level, including:	%	75.3	85	95
Over the level attained on a world plane	%			2-5
B. Growth in the degree of utilization in comparison with 1980	%	125.1	130.8	150.4

Along with the measures for reducing the energy consumption in this branch, action will be taken to expand the assortment range with new products with better characteristics.

For cement, there is in view the growth of the percentage of special assortments through the assimilation of cement for combustion holes, white and colored cement and so on and of that with admixtures of ash and granulated slag. Steps will be taken to reduce and replace high-grade fuel by using coal to burn the clinker and by promoting the procedure of precalcination.

The percentage of hydrated lime and of the output of spinel-magnesite fireproof brick will rise; action will be taken to develop the production of special heat-insulating board based on asbestos cement and of tiles of stoneware and majolica with decoration; there will be pursued the expansion of the production of big concrete panels with a high degree of finishing and equipping, for which a cut in the specific consumption by 10 percent for cement and 44 percent for fuel in comparison with 1982 is to be provided by the technologies adopted.

For wood-processing products, assortment and prototype dimensions of furniture in new, economical solutions, with low weight and standardized dimensions for overall sizes and component elements, will be designed and achieved by 1985. In addition, steps will be taken to reduce the thicknesses of all wooden products with a view to the better utilization of wood. Action will be taken to assimilate ennobled board with an index of slow propagation of flame and hardened laminated wood; the growth of the percentage of art furniture in the total furniture output to 27.8 percent in 1985 and 33 percent in 1990 will be secured. In this framework, the value of the furniture output obtained from a cubic meter of wood will be 1.5 times higher in 1990 than in 1982.

For chemical and paper pulp, action will be taken to increase the degree of white and cut consumption and to get greater strength and better printing quality by using new agents for sizing and retention of the fibers and materials. At the same time, the conditions will be provided for cutting the gram weight by 12.5 percent for paper and 24.5 percent for cardboard in 1985 and by 15 percent and 29 percent, respectively, in 1990 in comparison with 1982 and for expanding the utilization of wastepaper in the manufacture of paper and cardboard.

f) In light industry, the main general indicators regarding the technical and qualitative level of production will evolve as follows:

Category		1985	1987	1990
A. Percentages of the total number of products:				
Products at a high world level, including:	%	70	86	96
Over the level attained on a world plane	%		2-5	
B. Growth in the degree of utilization in comparison with 1980	%	128.3	138.6	160.8

The improvement in the quality of the products in this branch will be achieved along with the continual diversification of the assortments and the improvement of the manufacturing structures under the conditions of reducing the consumption of raw materials and supplies and promoting substitutes.

The provisions for equipping the branch with a series of new, highly technical equipment, with a higher degree of automation and higher productivities, have also been taken into account for the current 5-year period.

For cloth, the production of the better assortments, uncreasable, stain-resistant, treated cloth without shrinkage, achieved in a varied range of colors, will be developed with priority. Firm measures will be applied to reduce the consumption per square meter, in conformity with the standards set, with the strength of the cloth being kept at a high level by using finer thread and increasing the set.

In the production of leather footwear and garments, the achievement of assortments of leather with marked softness and a velvety look, water-repellent suede of pigs skin, and poromeric synthetic leather on a woven backing will be in view.

Within the production of articles for home use, enameled vessels of plate with heat-resistant accessories of Bakelite or ceramics, with thin sides and a thick bottom, with boiling efficiencies of 58-60 percent, decorated with decals and colored enamel, will be assimilated.

At the same time, the range of better products of glass, crystal and fine porcelain of high economic value, in demand for exportation and on the domestic market, will be expanded.

The diversification and the raising of the qualitative level of the products under the conditions of reducing the consumption of raw materials and promoting substitutes will be accented in the 1986-1990 5-year period.

In all sectors of the branch, a number of new, modern, highly efficient technologies will be assimilated and promoted on a wide scale.

In this framework, in the spinning mills and weaving mills, there is to be undertaken the application of technologies with a low number of phases and for optimization of the processes of bleaching, mercerizing and washing that would lead to the reduction of the consumption of water and thermal energy by 20-40 percent and the consumption of chemical supplements by 10-20 percent; for the operation of dyeing, action will be taken to promote rapid dyeing, which leads to savings of 50-60 percent in thermal energy.

In the garment industry, the efforts are oriented toward raising the degree of automation of the processes, especially in the grading, and cutting operations, and toward introducing unconventional technologies of processing and assembly (bonding and gluing).

For footwear, steps will be taken to develop the system of prefabrication of the components, which will constitute the basis for diversifying and raising the quality of production and expanding on a wide scale the procedures of extrusion and injection for protective footwear, using new types of thermoplastic polymers.

g) In the food industry, the improvement in the quality of the technical level of the products is expected to be achieved under the conditions of utilizing the resources of agricultural raw materials as rationally as possible, through the assimilation of new assortments with higher qualities.

To this end, there will be undertaken the utilization of the results of scientific research in order to ensure that the new assortments respond as well as possible to the tastes of the population and to the requirements for rational nutrition.

In this framework, provision is made for the expansion of the utilization of protein derivatives of vegetable origin and the maximal utilization of domestic resources such as forest fruits, plants from indigenous flora and so on, in order to secure completely the base of raw materials for the manufacture of refreshing juices of suitable quality. Provision is also made for the use of liquid fumes and extracts of indigenous plants with better properties for seasoning food preparations, with a view to improving their organoleptic attributes.

At the same time, action will be taken to redesign the manufacturing technologies and rationalize the technological flows, especially in the meat, milk, milling, baking and sugar-products industry, to modernize the equipment and installations, and to raise the degree of utilization of all resources, reduce losses of any kind and raise the degree of modernization of the work of handling and transportation of agricultural raw materials.

Throughout the food industry, firm steps will be taken, as early as the current 5-year period, to improve the manufacturing recipes, to optimally carry out the production processes, and to provide all the conditions for preserving and maintaining the nutritive characteristics.

Similar actions will also be undertaken in the 1986-1990 5-year period; new assortments will be introduced into production and the efforts to expand the material base by attracting new raw materials into the production circuit will be continued. For improving the color and the organoleptic characteristics, aromas, enzymes and natural dyes will be assimilated and substances suited to the making of ice cream and juices will be used. The preservability of the refreshing juices will be improved.

In this stage, a number of food biotechnologies, especially for the manufacture of proteins, nucleic acids, organic acids, lysine, glucose, fructose, starch and so on, will be perfected.

h) In the mining industry, the introduction of technical progress is oriented with priority toward diversifying the extraction and dressing technologies--with the achievement of suitable equipment--with a view to the growth of production, the overall utilization of the reserves, and the extraction of useful elements from the deposits and from the mining dumps and decanting ponds of the dressing plants, and toward reducing the energy and material consumptions along with utilizing the possible ways to improve the quality of the products recovered from the deposits put into operation, poorer and poorer deposits with a large number of accompanying useful components.

In the coalfields--besides the improvement in the working methods and digging technologies, with equipment for overall mechanization of the work, suited to beds of different thicknesses (small, medium and big) and to differently consolidated surrounding rocks--the procedures for reducing the quantities of useless rock in the extracted coal, through selective working of the coalbeds and rock layers and through subsequent culling of the lumps of useless rock, will be expanded. Greater attention will be devoted to the work of drying the working areas and draining the infiltration water, to reduce the wetness of the extracted coal and to provide normal equipment-operating conditions and optimally carry out the technological processes of extraction and transportation.

The equipment and technological flows in the coal-dressing installations--especially those for obtaining assortments of coking coal--will be improved, with a view to lowering the amount of ash in the finished products, along with raising the degree of coal recovery.

In the sector of metalliferous and nonmetalliferous ores, the scientific and technological research will be oriented mainly toward improving the methods of working veins of small and medium thickness, with selective extraction and with mechanization of the operations, in order to substantially increase production and labor productivity, along with reducing the losses. In this regard, the methods of working with vertical strips, with storage of the ore with movable metallic support and so on, will be expanded and improved, and in the working of thick veins, the accent will be put on applying the methods of extraction in sublevels, with chambers and pillars, with blasting chambers, which provide productivities 2-3 times higher than those now achieved. The improvement of the removal and transportation of the ore from the faces by improving the combined loading-transportation-unloading machines will be pursued.

In the ore-dressing field, the devising of combined technologies for overall utilization of the basic metals (lead, zinc, copper) in poor polymetallic ores is in view (preconcentration-concentration, flotation, collective-selective, chemical treatment and so on). New technologies for utilization of accompanying and dispersed metals in polymetallic ores (molybdenum, tin, tungsten) will be devised and introduced, along with the achievement of suitable equipment and the synthesis of the necessary chemical reagents.

For the utilization of reserves of ores with a low amount of iron and weakly magnetic ores, new procedures of dressing them through flotation or hydrometallurgy will be introduced.

With a view to raising the yields in recovering metals in concentrates, automatic technological lines, with automatic control of the composition and automatic application of the dressing reagents, will be introduced.

For expanding the better assortment range of nonmetalliferous products, especially kaolin and fire clay, new technologies for chemical and electromagnetic dressing of crude ore will be devised and the technologies for obtaining new assortments of graphite, feldspar and bentonite, with extended fields of application, will be improved.

IV. The Tasks of the Economic Units and the Central and Local Bodies for Raising the Technical and Qualitative Level of Products and Raising the Degree of Utilization of Raw Materials and Supplies

By 1 March 1984, the ministries, centrals, enterprises and scientific-research and technological-engineering institutes will draw up programs of their own that detail the tasks and responsibilities that devolve upon the economic units along the line of raising the technical and qualitative level and modernizing all existing products under manufacture, and the improvement of the technological processes of production and quality control with a view to concretizing the actions that must be undertaken to raise the quality and reliability of each particular product.

Action will be taken to precisely establish the quantities and qualities of the raw materials, supplies, subassemblies and parts that condition the achievement of the technical and qualitative level of products, stipulated by programs, finalizing the respective contracts and protocols on the legal dates.

The ministries and industrial centrals, with the help of the State Inspectorate General for Product Quality Control, will improve the professional training of the technical-quality-control personnel through the assimilation of modern methods and, in particular, statistical control, the aim being to increase the efficiency of the control activity and the responsibility of the doers.

With a view to continually raising the quality of products and keeping their performances at the level of the best achievements on a world plane, analyses will be organized annually, with finalization in the first quarter, by ministries, centrals, combines and enterprises, together with the technological research and engineering institutes, for each product under current manufacture, with the results being used to update the provisions of the quality programs.

The enterprises, centrals, ministries and technological research and engineering institutes will form banks of technical and economic data referring to similar products on a world plane that would be used to analyze the qualitative level of the products in their own manufacturing and to prepare studies on the assimilation and approval of new products and the modernization of products under current manufacture.

The centrals and enterprises will strengthen the conception departments or will form staffs of specialists that, under the technical guidance of the specialized institutes, would take over the performance of the research and design tasks that result from the quality programs, with a view to speeding up the modernization process and raising the quality of the products.

The Ministry of Technical-Material Supply and Control of the Management of Fixed Assets, together with the plan titulars, the centrals and the enterprises will act firmly to do on time and with good quality the work of current maintenance and repairs and capital repairs on machines, equipment and installations. Along with the work of capital repairs, modernization work will also be done in order to provide high performances for operating them at the level of similar new products; strict control over the performances of the machines, equipment and installations will be instituted with a view to providing manufacturing precisions in conformity with the technological instructions.

For providing the manufacturing processes with means of measurement and control on a par with the precision required by the manufacturing documentation, the ministries producing measurement and control apparatus will set up manufacturing programs correlated with the provisions of the present program; steps will be taken to completely meet the need for measurement and control apparatus.

The ministries, centrals and enterprises, with the help of the State Inspectorate General for Product Quality Control, will take steps to introduce, beginning with 1984, modern methods of tracking the optimization of the quality of products in relation to the costs incurred for achieving them at all their own units.

The ministries, with the help of the Romanian Institute for Standardization and the State Inspectorate General for Product Quality Control, will adapt the standards for products to the quality conditions of similar products at a high world level.

The ministries, together with the State Inspectorate General for Product Quality Control, will secure in all economic units the application of modern control methods, involving, to this end, all worker personnel, from designers to doers and controllers of quality, in achieving the products with a technical and qualitative level set by the design. Modern control technologies will be established for all products, and apparatus and devices with a high technical level will be provided for achieving in automated systems control of the technical and qualitative performances of products.

The Ministry of Finance, the State Planning Committee and the National Council for Science and Technology will analyze annually the formation and use of the funds for new technology in correlation with the requirements for speeding up the rate of modernization of production, in conformity with the provisions of the present program.

The State Planning Committee will include with priority in the 5-year and annual plans the material and financial means needed for completely fulfilling the provisions of the program.

The Ministry of Education and Instruction, the other ministries and the "Stefan Gheorghiu" Academy will take steps to include in the educational programs knowledge on the providing of product quality and reliability and on modern control methods.

The collective leadership bodies in the economic units will act to improve the professional, scientific and technical knowledge of the working people, of all personnel, with the raising of their level of skill and the widening of their horizon of knowledge constituting an essential requirement for solving in the best way the problems of modernizing each economic unit, with a view to raising the technical and qualitative level of the entire output.

The party bodies and organizations and the trade-union, mass and public organizations will put in the center of their concerns the implementation of the program regarding the improvement of the technical and qualitative level of products and the better utilization of raw materials, supplies, fuel and energy and will establish political and organizational measures for each unit with a view to the exemplary fulfillment of all the provisions of the program.

The press, radio and television, together with the ministries and other central bodies, will include in newspapers, magazines and broadcasts suitable material for popularization that would help to educate the working people in the economic and service units, the whole populace, with a view to the creation of an opinion for strictly complying with the quality standards, the raising of the performances of products to the level of the peak achievements, the following of the manufacturing documentation, and the strengthening of technological discipline, thus helping to carry out the policy of the party and state and the instructions of the secretary general of the party with regard to continually increasing the quality and competitiveness of products.

The implementation of the quality program, drawn up on the initiative and under the direct guidance of Comrade Nicolae Ceausescu, secretary general of the party and chairman of the republic, will make a decisive contribution to raising all economic activity to a qualitatively higher level.

Marking out the ways and measures for continually raising the quality of Romanian products to the level of the best achievements on a world plane, for reducing the consumption of raw materials, supplies, fuel and energy and for raising the degree of utilization of them and increasing the competitiveness of Romanian products on foreign markets, the program's implementation will have to be in the center of the concerns of all the working people in the enterprises, in the research and design institutes, in the conception sectors, and in the centrals, ministries and other central bodies, who must engage themselves with all their might, with all their capacity, in completely fulfilling in the best way the objectives and tasks set.

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FOREIGN TRADE RESULTS IN FIRST QUARTER OF 1984

Belgrade EKONOMSKA POLITIKA in Serbo-Croatian 30 Apr 84 pp 10-12

[Excerpts] The results of foreign trade for the quarter, among which the reduction of the trade deficit is judged to be the most valuable, nevertheless were caused primarily by changes in the quantitative aspect. This applies above all to exports, since the increase of production supplies and raw materials in total exports does not give much indication of the qualitative shifts called for in export policy. Actually, exporters still face many obstacles which they will have to overcome, among the most important of which will be the upcoming rise of prices, which will certainly affect those products incorporated into goods for export. This applies particularly to the finished products sectors such as the production of equipment, whose share in total exports is already dropping. This shows that at the level of the arrangements embodying the system there have been no changes whatsoever, at least in the first 3 months, concerning the foreign exchange necessary for the import of production supplies for any sort of normal supply of the economy, so that work organizations would be able to purchase production supplies in some other way than through their own exports regardless of how opportune that export transaction is with respect to price and especially with respect to the overall situation on the domestic market. However, the work organization cannot be expected to be mindful of this factor in the situation when it is mainly left to its own devices in obtaining its own foreign exchange for reproduction, so that probably this effort will have to be continued.

The principal features of Yugoslavia's visible foreign trade over the period January-March of this year consists of a very modest growth of exports and somewhat diminished imports. The total value of exports and imports over the first 3 months was \$4,818 million, which represents a reduction of only \$49 million from the same period of last year. Exports had a value of \$2,276 million, an increase of \$37 million, or 1.7 percent, over the same period of last year. The value of imports was \$2,542 million, which is a drop of \$86 million, or 3.3 percent, from the first quarter of last year.

When we compare the figures on exports and imports, it is evident that the trade deficit is \$266 million. Since the deficit over the period January-March 1983 was at the level of \$389 million, it follows that this year's deficit was \$123 million, or 31.6 percent, smaller. Viewed from the standpoint of the quality of foreign currencies, a deficit of \$149 million was

recorded in trade with the convertible area, while a deficit of \$117 million was recorded in visible trade with the bilateral payments area.

[Box, p 10]

The Most Recent Figures

Total Yugoslav exports up to 18 April, according to a report of the Federal Bureau of Statistics, were 4 percent higher than over the same period of last year and amounted to 347 billion dinars. Exports to the convertible area were up 12 percent and totaled 228.8 billion dinars. Exports over this period were down 2 percent from last year and amounted to 380.8 billion. Imports from the convertible area were also down 2 percent from last year, or 250 billion dinars. The ratio of exports to imports thus rose to 91 percent (86 percent last year), and reached a level of 74 percent even in trade with the advanced countries. In trade with the developing countries it was 86 percent, while in trade with the socialist countries exports were 16 percent greater than imports.

Imports of production supplies were up 3 percent and amounted to 308.5 billion dinars, imports of equipment were down 20 percent (52.7 billion), while imports of consumer goods were at the same level as last year.

Exports

As is well known, the products of industry and mining have the largest share in our exports, so that they account for \$2,122 million, or 93.2 percent, and the share of agriculture, fishing, forestry and other activities amounts to only \$154 million, or 6.8 percent of the total value of goods exported.

There are 12 activities within the sector of industry and mining which distinguish themselves in exports and which are regarded as Yugoslavia's key exporters. The following activities, that is, account for 80.8 percent of the total value of exports and 86.6 percent of exports by the industry and mining sector:

<u>Economic Activity</u>	Exports (millions of dollars)	Share, %
Production and processing of chemical products	243	10.7
Production of power machines and appliances	200	8.8
Production of yarns, fabrics and finished textile products	197	8.7
Production of leather footwear and clothing accessories	177	7.8
Machinebuilding	174	7.6
Production of transportation equipment	156	6.9
Metal manufacturing	146	6.4
Production of lumber, wood sheet and finished wood products	142	6.2

Table (continued)

<u>Economic Activity</u>	<u>Exports</u> (millions of dollars)	<u>Share, %</u>
Production of processed foods	127	5.6
Production and processing of nonferrous metals	127	5.6
Ferrous metallurgy	77	3.4
Shipbuilding	71	3.1
Other industrial activities and mining	285	12.5
Agriculture, forestry, fishing and miscellaneous	154	6.7
 Total	 2,276	 100.0

By comparison with the first quarter of last year the largest growth, 52.2 percent, was recorded by ferrous metallurgy, and the largest decrease, 36.5 percent, in shipbuilding, which was followed by production of power machines and appliances (14.5 percent) and the production and processing of chemical products (12.2 percent).

Examined with respect to economic purposes, exports of production supplies take a convincing first place:

<u>Economic Purpose</u>	<u>Exports</u> (millions of dollars)	<u>Share, %</u>
Production supplies	1,231	54.1
Equipment	326	14.3
Consumer goods	719	31.6
 Total	 2,276	 100.0

During the first 3 months of this year exports of production supplies rose 10.1 percent, exports of consumer goods 2.5 percent, while exports of equipment dropped off 22.4 percent. There is no doubt that the large exports of production supplies on the one hand and the very modest exports of equipment on the other do not give a favorable picture from the standpoint of the level of processing of the products exported.

Exports by currency areas have been as follows in value terms:

<u>Currency Area</u>	<u>Exports</u> (millions of dollars)	<u>Share, %</u>
Convertible area	1,514	66.5
Bilateral payments area	762	33.5
 Total	 2,276	 100.0

It is worth emphasizing that exports to the countries of the convertible area were up 10.1 percent over the same period of last year, which is certainly encouraging with respect to achieving the projected annual growth of exports to that area called for in the plan. Exports to the bilateral payments countries experienced a drop of 11.9 percent. Viewed by countries, our largest trading partners with respect to exports are the following five countries, whose share in total exports amounts to 53.3 percent:

<u>Country</u>	<u>Exports (millions of dollars)</u>	<u>Share in Total Exports, %</u>
USSR	588	25.8
Italy	215	9.4
West Germany	209	9.2
Czechoslovakia	121	5.3
United States	82	3.6

Exports to Italy rose 41.4 percent, exports to West Germany 25.1 percent and exports to the United States 10.8 percent, as against an 11.7-percent drop in exports to Czechoslovakia and a drop of 11.3 percent in exports to the USSR.

Exports by republics and provinces, along with exports at the federal level, were as follows:

<u>Republic, Province, or the Federation</u>	<u>Exports (millions of dollars)</u>	<u>Share, %</u>
Bosnia-Hercegovina	323	14.2
Montenegro	45	2.0
Croatia	500	22.0
Macedonia	110	4.8
Slovenia	437	19.2
Serbia	860	37.8
Serbia proper	574	25.2
Kosovo	47	2.1
Vojvodina	239	10.5
Federation	1	0.0
Total	2,276	100.0

Visible exports from SR [Socialist Republic] Montenegro were up 36.4 percent, those from SR Slovenia up 9.2 percent, those from SR Serbia up 5.0 percent (2.3 percent for Serbia proper, 23.1 percent for SAP [Socialist Autonomous Province] Kosovo and 23.5 percent for SAP Vojvodina). And 4.2 percent from SR Macedonia, while exports from SR Bosnia-Hercegovina were down 13.0 percent and those from SR Croatia were down 1.5 percent.

The distribution of exports with respect to the level of development of the particular countries was as follows:

<u>Group of Countries</u>	<u>Exports</u> (millions of dollars)	<u>Share, %</u>
Advanced countries	1,016	44.6
Socialist countries	832	36.6
Developing countries	428	18.8
 Total	 2,276	 100.0

The growth of exports to the advanced countries was 24.9 percent, by contrast with the 17.7-percent reduction of exports to the developing countries and the 3.6-percent reduction of exports to the socialist countries.

Imports

In the breakdown by economic sectors, various goods were imported for the sector of industry and mining worth \$2,357 million, or 92.7 percent, and those imported to meet the needs of agriculture, forestry, fishing and miscellaneous activities were worth \$185 million, or 7.3 percent of total imports.

On the side of imports there are again 12 economic activities which are the most important and account for 86.4 percent of total imports and 93.2 percent of imports to meet the needs of industry and mining:

<u>Economic Activity</u>	<u>Imports</u> (millions of dollars)	<u>Share, %</u>
Production of petroleum, gas and petroleum products	647	25.4
Production and processing of chemical products	438	17.2
Machinebuilding	304	12.0
Production of power machines and appliances	148	5.8
Production of transportation equipment	132	5.2
Ferrous metallurgy	126	5.0
Production of processed foods	91	3.6
Production and processing of nonmetallic minerals	71	2.8
Metal manufacturing	68	2.6
Production of yarns, fabrics and finished textile products	60	2.4
Coal production and processing	58	2.3
Production and processing of nonferrous metals	53	2.1
Miscellaneous industrial activities	161	6.3
Agriculture, forestry, fishing and miscellaneous	185	7.3
 Total	 2,542	 100.0

The production and processing of chemical products showed a growth of 17.8 percent, and it is also worth mentioning the increase in imports of processed foods and of goods for the production and processing of nonferrous metals. A

reduction was recorded by the production of petroleum, gas and petroleum products (15.7 percent), by the production of transportation equipment (22.6 percent), by the production and processing of nonmetallic minerals (21.8 percent), by machinebuilding (12.8 percent) and by certain other activities to a considerably smaller degree.

Petroleum imports amounted to 1.7 million tons, which were valued at \$387 million, which is 0.8 million tons and \$227 million less than in the same period of last year.

The distribution of imports by economic purposes is as follows:

<u>Economic Purpose</u>	<u>Imports (millions of dollars)</u>	<u>Share, %</u>
Production supplies	2,058	81.0
Equipment	352	13.8
Consumer goods	132	5.2
Total	2,542	100.0

Imports of production supplies were up only 1.1 percent, and imports of consumer goods were also up 8.6 percent, while imports of equipment dropped off 25.3 percent.

The very high share of production supplies in our imports is striking; it confirms the fact that the domestic industry is highly dependent on imports.

Imports from the convertible area are appreciably greater than imports from bilateral payments countries:

<u>Currency Area</u>	<u>Imports (millions of dollars)</u>	<u>Share, %</u>
Convertible area	1,663	65.4
Bilateral payments area	879	34.6
Total	2,542	100.0

Imports of goods from the countries of the convertible area were down 2.3 percent, and imports from the bilateral payments countries were also down 5.1 percent.

When imports are examined by countries, it is evident that the following five countries, which account for 56.9 percent of total imports in value terms, stand at the top:

<u>Country</u>	<u>Imports (millions of dollars)</u>	<u>Share, %</u>
USSR	497	19.6
West Germany	327	12.9
Iraq	264	10.4
Italy	215	8.5
United States	141	5.5

Imports from Italy showed an increase of 19.4 percent, those from West Germany 0.1 percent, those from the United States 5.2 percent, and those from Iraq 438.8 percent, while those from the USSR recorded a drop of 25.4 percent and those from Czechoslovakia a drop of 1.5 percent.

Imports by republics and provinces and imports to meet the needs of the Federation were as follows:

<u>Republic, Province, or the Federation</u>	<u>Imports (millions of dollars)</u>	<u>Share, %</u>
Bosnia-Hercegovina	346	13.6
Montenegro	52	2.0
Croatia	561	22.1
Macedonia	197	7.7
Slovenia	437	17.2
Serbia	864	34.0
Serbia proper	494	19.4
Kosovo	38	1.5
Vojvodina	332	13.1
Federation	85	3.4
 Total	 2,542	 100.0

There was a growth of imports of 107.7 percent for Montenegro, 4.2 percent for Croatia and 10.0 percent for Macedonia, while smaller imports were recorded for Bosnia-Hercegovina (12.7 percent), Slovenia (7.2 percent) and Serbia (6.8 percent); the drop was 24.6 percent for Serbia proper and 9.9 percent for SAP Kosovo, while SAP Vojvodina recorded an increase of 44.9 percent.

Viewed with respect to the level of development of countries, the advanced countries took first place:

<u>Groups of Countries</u>	<u>Imports</u> (millions of dollars)	<u>Share, %</u>
Advanced countries	1,149	45.2
Socialist countries	905	35.6
Developing countries	488	19.2
 Total	 2,542	 100.0

A 2.1-percent growth of imports was recorded by the advanced countries, while the developing countries showed a growth of 17.7 percent, by contrast with the socialist countries, from which imports were down 16.8 percent.

Deficit

As has already been emphasized, the trade deficit over the period January-March of this year was \$266 million.

<u>Economic Activity</u>	<u>In Millions of Dollars</u>	
	<u>Deficit</u>	<u>Surplus</u>
Production of petroleum, gas and petroleum products	581	
Production and processing of chemical products	195	
Machinebuilding	130	
Ferrous metallurgy	49	
Coal production and processing	48	
Production and processing of nonmetallic minerals	38	
Production of leather footwear and clothing accessories		176
Production of yarns, fabrics and finished textile products		137
Production of lumber, wood sheet and finished wood products		136
Metal manufacturing		78
Production and processing of nonferrous metals		74
Shipbuilding		68
Production of power machines and appliances		52
Production of processed foods		36
Production of transportation equipment		24
Miscellaneous activities	6	
 Total	 1,047	 781

Viewed by economic purposes, the deficit and surplus show the following pattern:

<u>Economic Purpose</u>	<u>In Millions of Dollars</u>	
	<u>Deficit</u>	<u>Surplus</u>
Production supplies	827	
Equipment	26	
Consumer goods		<u>587</u>
Total	853	587

With respect to the quality of foreign currencies, the major share of the trade deficit was incurred in visible trade with the convertible area:

<u>Currency Area</u>	<u>Deficit (millions of dollars)</u>	<u>Share in Total Deficit, %</u>
Convertible area	149	86.0
Bilateral payments area	<u>117</u>	<u>44.0</u>
Total	266	100.0

The share of republics and provinces as well as of the Federation in the trade deficit with foreign countries is shown by the survey below:

<u>Republic, Province, or the Federation</u>	<u>Deficit (millions of dollars)</u>	<u>Share in Total Deficit, %</u>
Bosnia-Hercegovina	23	8.7
Montenegro	7	2.6
Croatia	61	22.9
Macedonia	87	32.7
Slovenia	--	--
Serbia	4	1.5
Serbia proper	+80	+30.1
Kosovo	+ 9	+ 3.4
Vojvodina	-93	-35.0
Federation	<u>84</u>	<u>31.6</u>
Total	266	100.0

On this occasion we should call particular attention to the very rare phenomenon of SR Slovenia having full equilibrium in its trade balance. That is, this republic exported goods worth \$437 million and also imported goods worth \$437 million.

The advanced countries accounted for 50.0 percent of the total deficit, as can be seen from the following table:

<u>Group of Countries</u>	<u>Deficit (millions of dollars)</u>	<u>Share in Total Deficit, %</u>
Advanced countries	133	50.0
Socialist countries	73	27.4
Developing countries	60	22.6
Total	266	100.0

7045

CSO: 2800/337

YUGOSLAVIA

ECONOMIC GROWTH, ENERGY PRODUCTION COMPARED

Belgrade PRIVREDNI PREGLED in Serbo-Croatian 30 May 84 p 3

[Text] An analysis of the last three 5-year planning periods and of fulfillment of plans for development of the fuel and power industry in those periods indicates that approaches to this development have not been the same from one 5-year period to the next within this overall period. There have even been contradictions, since the commitment to larger and indeed even maximum reliance on domestic sources of energy, above all coal, was accompanied at the same time by more rapid development plans for the production of petroleum products, predominantly from imported petroleum. In addition, in the periods from 1966 to 1970 and from 1971 to 1975 the emphasis in development of the fuel and power industry was on more rapid transition of consumption from coal to "higher-quality forms of energy--petroleum and gas." Accordingly, the share of petroleum and gas in total energy consumption was to increase about 16 percentage points in just 5 years and the share of imported energy in total energy consumption was to increase 6 percentage points. Only in the planning period 1976-1980 was there a detailed agreement on development policy which stated precisely the main directions and targets for fulfillment.

It is not difficult to conclude that the development of the fuel and power industry has been very uneven and has diverged considerably from the development plan, not only with respect to quantification, but also with respect to the country's agreed policy, which was especially evident in the period 1976-1980.

Up until 1965 our country was characterized by a predominance of domestic sources of energy, and only toward the end of this period was there a tendency toward a reduced share of coal in total energy consumption and toward its replacement by liquid and gas fuel. After 1965 there was a strong expansion of liquid fuel consumption, accompanied by a steadily growing dependence on imported petroleum and natural gas. This process took place in a function of mutual dependence with changes that occurred in the economic structure and the structure of industry in particular. That is, development of heavy industry lagged more and more, and the manufacturing branches developed very rapidly.

Substitution of liquid fuels and gas for domestic coal occurred primarily on the basis of cheap petroleum and gas. It was the judgment at that time that

specific investments in production of natural gas and in the production and refining of petroleum were lower than for coal production, except in the case of strip mining of lignite, that labor productivity was considerably lower in coal production, and that specific investments in transportation facilities to carry gas and oil for heating from producer to consumer were considerably lower than in the case of coal transport. Other factors were also cited which for "economic" and ecological reasons favored petroleum and gas over coal. This had a bearing on the very rapid expansion of liquid fuel consumption, especially mazut, even in areas where this was not influenced by technological considerations.

The result is that during all these three 5-year periods considerable discrepancies occurred between fulfillment and the planned growth both for the individual forms of energy as well as for their growth relative to the growth of the entire economy and industrial output.

Planned and Actual Growth Rates of the Entire Economy, Industry and Energy

<u>Indicator</u>	1966-1970		1971-1975		1976-1980	
	<u>Plan</u>	<u>Actual</u>	<u>Plan</u>	<u>Actual</u>	<u>Plan</u>	<u>Actual</u>
Social product of the entire economy	8.0	5.8	7.3	5.9	6.9	5.6
Physical volume of industrial output, total	9.5	5.9	8.0	8.0	8.0	6.8
Electric power	14.5	11.4	10.0	8.7	10.0	8.0
Coal	5.0	-1.8	5.0	3.8	9.5	4.3*
Petroleum	15.5	11.5	10.0	7.7	5.0*	2.8*
					8.5**	8.3**

* Production.

** Refining.

The movements show that coal production has had not only a more modest growth rate, but also a smaller relative growth than for the output of electric power and petroleum; that is, the production of primary energy has lagged behind the consumption. The gap was made up by imports, especially in the period 1976-1980, when the production of total primary energy increased at an average annual rate of 4.5 percent, while the growth rate for consumption was 6.8 percent.

The uneven growth of production brought about a change in the structure of total primary energy produced. For example, between 1965 and 1980 there was a drop in the share of production of all types of coal, while the share of other primary forms of energy increased in the total primary energy produced. The share of total coal produced dropped from 66.8 percent in 1965 to 47.4 percent in 1980, while the share of petroleum increased from 15.6 percent to 18.4 percent, that of natural gas from 2 to 6.1 percent, and that of hydroelectric power from 15.6 to 28.1 percent in total production of primary energy.

Primary Energy Production

<u>Indicator</u>	<u>1960</u>	<u>1965</u>	<u>1970</u>	<u>1975</u>	<u>1980</u>	<u>1981</u>	<u>1982</u>	<u>1983</u>
Bituminous or better coal, millions of tons	1.28	1.17	0.64	0.60	0.39	0.38	0.39	0.39
Brown coal, millions of tons	9.63	10.51	8.98	9.43	9.67	10.62	10.74	11.30
Lignite, millions of tons	11.80	18.28	18.79	25.51	36.94	40.44	43.45	46.89
Total coal, millions of tons	22.71	29.96	28.42	35.54	47.00	51.44	54.58	58.58
Petroleum, millions of tons	0.94	2.06	2.85	3.69	4.24	4.38	4.34	4.12
Natural gas, millions of m ³	0.05	0.33	0.98	1.55	1.82	1.65	2.28	2.09
Hydroelectric power, billions of kwh	5.98	8.98	14.74	19.30	28.47	25.37	23.96	21.69
Growth rates of total primary energy	--	7.00	2.30	4.30	4.80	2.30	1.70	--

Examined by 5-year periods, the actual production of all forms of primary energy was less than planned, especially in the case of coal. Thus in 1970, instead of an increase of about 11 million tons, there was a drop of production of about 1.5 million tons.

Movements of this kind had to have an adverse effect on the volume and structure of production of secondary energy, where there was a large rise of the growth rate of production of petroleum products and a considerable slowing down of the growth of production of dehydrated coal and thermal electric power. At the same time, there was an increase in the share of production of petroleum products in total production of secondary energy from 57 percent in 1965 to 67.8 percent in 1980, primarily on the basis of the large increase in petroleum imports. Changes of this kind were indeed even planned in the period from 1965 to 1970 and in the period 1971-1975, but not for the period between 1976 and 1980.

There are numerous causes of these movements. One of the primary ones, without a doubt, is the lack of a self-management agreement to guide investments on the basis of pooled labor and capital, as well as the absence of agreed directions of development, shortcomings in administering economic policy measures to stimulate the agreed development, which is especially characteristic of the last 5-year planning period.

Nor is there any question that the main reason for inadequate production of primary energy is certainly the lag of investments in production of energy from domestic sources, and here the essential thing is that harmony has been lacking between the agreed development policy at the level of the country as a whole and the policy embodied in the social plans of the republics and provinces, so that the selection of the planned capacities in the republics

and provinces as well as of the total resources necessary--and the production based on that--considerably exceeded what had been agreed on in the social plan of Yugoslavia. This largely brought about the long delay in project construction.

The share of total investments in the fuel and power industry in the investments in the entire economy and the entire industrial sector dropped from 12.4 percent in 1965 to 11.8 percent in 1979 and from 34.2 percent to 28.7 percent, respectively. The deterioration of the economic position of certain branches of the fuel and power industry also contributed to the relative lag of investments in production from domestic sources of energy. But neither should we neglect the unresolved issue of financing and mistakes made by investors and contractors, which resulted in unjustifiably long construction times, so that the construction costs rose rapidly because of the effect of inflation.

7045
CSO: 2800/346

YUGOSLAVIA

CONSUMPTION OF PRIMARY SOURCES OF ENERGY

Belgrade PRIVREDNI PREGLED in Serbo-Croatian 30 May 84 p 3

[Text] In the postwar period Yugoslavia has recorded high overall economic growth rates, higher than world averages. This is certainly the main reason why total energy consumption has grown at rates higher than the average for world consumption. Because of the relative lag of investments in the fuel and power industry there has been an ever greater growth of the discrepancy between the demand for energy and the supply, and the inadequate supply of certain forms of energy has been emerging as a limiting factor on economic growth, especially for certain branches of industry. The problems of investment in the fuel and power industry have been increasing in the period since 1970, when organizations of associated labor have been building their own infrastructure as the basis for their long-range development, and when oil pipelines, gas pipelines, and the 380-kv long-distance power transmission network have been under construction. To a certain extent this has also brought about the shortage of funds for construction related to the primary and secondary forms of energy, with the exception of capacity for primary refining of petroleum derivatives.

In the period 1961-1980 the social product in 1972 prices rose at an average annual rate of 6 percent, and energy consumption 6.2 percent. The elasticity coefficient was 1.03, in the period 1961-1965 that coefficient was 1.03, in the period 1966-1970 it was 1.00, in the period 1971-1975 it was 1.03, and in the period 1976-1980 it was 1.00. The growth of consumption brought about a dynamic development of the entire economy and industry, along with a change in the structure toward more rapid development of those branches which are large energy consumers (metallurgy, the chemical industry and others), along with the standard of living of the population.

Uneven Development of Consumption of the Various Forms of Energy

The growth rates of consumption of the various forms of energy differ considerably from the average rates for energy as a whole. Thus over the two previous decades coal consumption has risen at an average annual rate of 2.4 percent, petroleum consumption 12.8 percent, natural gas consumption 22.7 percent, and hydroelectric power 8 percent, while the rate was 6.2 percent for energy as a whole.

Growth Rate of Energy Consumption

<u>Indicator</u>	<u>5-Year Period</u>			
	<u>1961-1965</u>	<u>1966-1970</u>	<u>1971-1975</u>	<u>1976-1980</u>
Coal	4.5	2.2	2.9	4.4
Petroleum	16.6	20.7	8.7	6.4
Natural gas	46.1	23.9	9.5	15.0
Hydroelectric power*	9.6	9.8	6.5	7.2
Total primary energy consumption	7.0	5.8	6.1	5.6

* Hydroelectric power generated plus the net import or export of electric power.

Coal consumption has recorded a marked lag. It has been larger than was envisaged for the period 1966-1975, when the orientation was toward replacing coal with mazut. Only in the period 1976-1980 has there been a tendency toward higher coal consumption, but it has still been less than planned and necessary for purposes of more rapid replacement of domestic energy for imported energy. The development of the fuel and power industry in the period 1976-1980 showed especially significant departures from the agreed development defined in the agreements among the republics and provinces and in the social plan of Yugoslavia. The republics and provinces entered that planning period having already adopted development programs whose aggregate considerably departed from the development agreed for the entire country. The adoption of the agreements was late, especially concerning development of petroleum production and consumption. Since agreement was not reached among the representatives of the republics and provinces, it was not possible to adopt a uniform agreement on development of the fuel and power industry (generation and transmission of electric power and the production and transport of coal, petroleum, natural gas and man-made gas). A consequence of these positions is adoption of two agreements instead of one. (The Agreement on the Bases of the Yugoslav Social Plan for Development of the Electric Power Industry, Coal and New Forms of Energy Over the Period 1976-1980 was adopted in late 1977, and the Agreement on the Bases of the Yugoslav Social Plan for Development of Petroleum and Gas Over the Period 1976-1980 was adopted in mid-1979.)

The Refineries as a Stumbling Block

The main problem was the oversized program for construction of refinery capacity for primary refining of petroleum. The republics and provinces proposed 31.1 million tons, but it was estimated that 23.5 million tons would be more than adequate up to the end of 1980. In 1980 it was envisaged that 18.5 million tons of crude petroleum would be refined, while 15.17 million tons were actually refined. A paradox came about in that a battle was waged concerning other forms of energy over how to support the construction of the planned capacity, while in the petroleum industry the key problem was how to agree not to build unnecessary capacity in refineries. The lack of readiness for an agreement had the result that in 1983 refinery capacity exceeded 29 million tons.

The lack of a uniform policy governing development of the fuel and power industry in the last medium-term plan and the failure of overall fulfillment in development of the fuel and power industry not only deepened the discrepancies between the supply and demand and caused certain crises in supply of the market and its encapsulation, but they also increased further the dependence on imported energy. There is nothing unusual in the fact that this kind of behavior ultimately resulted in excessively broad programs for construction of fuel and energy capacity, except in the case of coal, and that there should have been a partialization of resources and delays in construction. The unaltered behavior in the fuel and energy sector has resulted in further construction not only of refineries, but also of many projects which are consumers of liquid fuels.

These shortcomings in supply, the intensification of dependence on foreign energy, and the mistakes in construction of capacity in the fuel and power industry would not have occurred, or they would have occurred to a far lesser extent if in the development of Yugoslavia's fuel and power industry to date there had not been the marked tendencies toward encapsulation within socio-political communities, which has made it more difficult to create a unified energy system in which the advantages of the various energy sectors would have been better utilized in view of the very uneven distribution of reserves and exploitability. There were no joint investments on an income-sharing basis, and this kind of lack of linkage in the electric power industry, for example, had the result that it did not function altogether as a unified technical and technological system, especially in links between the electric power industries of the republics and provinces. Nor were adequate efforts made to realize as fully as possible the jointly agreed policy governing development of the fuel and power industry, but rather the view altogether prevailed that everyone was responsible only for his own supply of energy.

7045
CSO: 2800/346

PAYMENTS PROBLEMS IN INVESTMENT WORK DONE ABROAD

Belgrade PRIVREDNI PREGLED in Serbo-Croatian 17 May 84 p 5

[Text] The problematical conditions for conducting business on the international market for work on capital investment projects are having an ever more pronounced impact on the rate at which contracts are concluded and on the volume of performance of programs which the Yugoslav construction industry has undertaken abroad. As a consequence there has been a rapid drop in the optimism which prevailed in previous years with respect to the possibility of a further intensive growth of employment on projects outside the country. Even without the definitive indicators of the Federal Bureau of Statistics, according to the data of the organizations of associated labor which had the highest share in doing that work, the total value of work done in 1983 exceeded the limit of \$2.6 billion U.S., while the volume of contracts approximated \$3 billion. Such results have not been recorded in any previous year. However, when compared to the previous 3 or 4 years, the program carried out for performance of work items and conclusion of contracts during 1983 was far less strongly pronounced. For example, whereas annual growth rates of performance of work over the period 1980-1982 was 17-28 percent, last year it dropped to between 4 and 6 percent compared to 1982.

The problems of collecting for work done on time have suddenly become acute, and as a consequence the inflow of funds into the country on the basis of work done and certified by the foreign investors has dropped to some extent. The disproportion between the amount of work done and the value of work paid for is having an ever greater impact. A calculation shows that more than 20 percent of work done in 1983 was not paid for on time, that is, collection was carried over to subsequent years, usually after 1985.

The situation in the first months of this year is similar in that regard. Nevertheless, the total inflow of foreign exchange into the country, though reduced, continues to be quite substantial. It is estimated that slightly more than \$800 million have come into the country on all bases and remained permanently in Yugoslavia's money flows, not including advances and other items remitted for a short time to domestic banks.

The first 4 months of this year show that last year, at least for a time, was a watershed year with respect to the growth of contracting and performance of capital investment projects. Under the impact of several problems related to

the representation of domestic construction organizations abroad, the amount of business was less than in the same period of last year. Similar trends have also been evident in the conclusion of new contracts.

The Growth of Activity at the Moment Does Not Promise an Overall Growth of Employment of Domestic Capacity Outside the Country in 1984

This development of activity in the first third of the year does not promise an overall growth of employment of domestic capacity outside the country in 1984, but rather indicates a certain reduction of real opportunities for an effort abroad. At the same time, on the basis of the pace of contracting and the character of the jobs being contracted for, there is an evident decline in the number of large projects (on the order of \$100 million or more), and an increase in the share of smaller programs running from \$10 to \$50 million. This shows that the long-range character of work on capital investment projects abroad is gradually weakening, which must even now evoke greater public support of the construction industry, if there is a desire in coming years not only to hold the place that has been gained as one of the largest contractors in the world doing this work, but also to ease the problem of employing capacity in the country.

Most of the problems which accompany our construction industry's representation abroad are long-term problems. This especially applies to credit financing of operations, that is, to the inadequate amount of support offered by domestic commercial banks (and to a lesser extent the Yugoslav Bank for International Economic Cooperation--JUMBES, to increase the volume of performance, as well as to postponement of settlement of financial obligations by foreign investors on the most important market--Iraq. In addition, there has been a constant increase in the number of countries taking part in the bidding for contracts on capital investment projects, especially as subcontractors, which is intensifying the already keen competition and bringing prices below the level accessible for organizations from only one country.

Firms from the advanced industrial countries of the West, whose bids are based on cheap manpower from a number of underdeveloped countries (Bangladesh, Thailand, Pakistan, South Korea, and so on) usually win the contracts in open international bidding. That is why the representation of our construction industry abroad has to be adapted more rapidly to the programs which can be obtained not through open competitive bidding but through direct negotiation, through intergovernmental arrangements, and through other forms of cooperation (joint enterprises, representative offices, and so on) which are not based on submitting bids in which losses are calculated from the outset and without assuming that the unfavorable business transaction will be overcome through the exporting of expensive equipment and the like. In such transactions there usually is no insistence on high credit support (80 to 100 percent) and cheaper credits, which is a frequent condition for obtaining contracts in open competitive bidding. The opportunities for the Yugoslav construction industry to win such contracts are not insignificant, since they represent a considerable portion of the present makeup of the programs being carried out.

The resources channeled into bidding in open competition, which is usually unsuccessful, should be put to better use to support other forms of representation and a different effort to obtain business. The datum that even our largest organizations like "Energoprojekt" win at the most 2-3 contracts for every 100 bids submitted is indicative of the low effectiveness of our bids. The situation is still less favorable for the smaller organizations.

Stagnation of the Volume of Work on Capital Investment Projects in 1984

The trends referred to in the development of this business so far this year and the problems which the contractors face are resulting in less favorable estimates of the volume of performance and contracting up to the end of this year. On the basis of a survey conducted by the Institute for Market Research among the largest organizations operating as contractors in working on capital investment projects abroad, the volume of activity in 1984 will not exceed that of the previous year, and there are some who think that there will be a certain drop in the business contracted for as well as in actual performance.

Viewed as a whole, the prevailing view is that the volume of work on capital investment projects abroad in 1984 will be at the 1983 level, assuming definite public support at a higher level of quality for carrying out new projects and projects already under way. Only in the CEMA area can we anticipate a mild increase in performance, but this will not significantly affect the overall level of results.

The most important markets will continue to be in the developing countries (Iraq, Libya and Algeria) since on the basis of the present situation the opportunities for opening up new markets in the very near future, except Egypt and the Arab Emirates to some extent, are rather modest.

It is evident that the organizations surveyed rarely envisage a drop in the number of workers employed outside the country. On the contrary, they are operating with an estimate calling for some increase in their number. This is a little unusual in view of the outlook concerning development of this activity which we have referred to.

It is anticipated that in 1984 between 30,000 and 32,000 Yugoslav workers will on the average be employed on projects abroad, i.e., 3 to 5 percent more than in 1983. Trained personnel have the highest share in the proportional breakdown of this labor force. The opportunities for employing unskilled workers and workers with a low level of specialized training are primarily limited by legal barriers, which have recently been adopted by all countries where the work is being done so that their own manpower will be hired.

7045
CSO: 2800/335

YUGOSLAVIA

QUOTA PROBLEM IN BORDER-ZONE TRADE DISCUSSED

Belgrade PRIVREDNI PREGLED in Serbo-Croatian 25 May 84 p 2

[Text] The restriction on this year's local border trade between Yugoslavia and neighboring countries will particularly affect local trade with Italy. The reduction of those transactions by slightly more than a third of those we had with that country last year will first of all have an adverse effect on the business operation of Slovenian and Croatian organizations of associated labor, which up to now have met a sizable portion of their needs in reproduction in precisely that way. In addition, this policy can also affect the volume of general trade with Italy (our trade deficit is not insignificant), and it could cause serious trouble for the further development of relations, which otherwise have been good neighborly.

Given this importance of local border trade, we will undertake a fairly extensive examination of the difficulties that have arisen and of "solutions." That is, there is a possibility that the barrier could very soon be lowered and this form of trade with one of our strongest economic partners could diminish to insignificance. After all, as shown by the first months, before midyear the quota allowed under the Order on Yugoslavia's Joint Exchange Policy for this year will be used up; it specifies that local border trade may not exceed 15 percent of Yugoslavia's total trade with a particular neighboring country, which in the case of Italy puts a maximum of \$320 million.

The Advantages of Local Transactions

Local border trade with neighboring countries takes place under intergovernmental agreements which Yugoslavia has concluded with Italy, Hungary, Romania and Bulgaria. Agreements of this kind have not been concluded with Austria, Greece and Albania in spite of our efforts in almost all trade talks to date. We carry on the largest volume of local border trade with Italy, and it is regulated by the Trieste and Gorica agreements on local trade between border zones of the two countries dating from March 1955.

The year before last local border trade with that country accounted for 14.6 percent of total Yugoslav visible trade, and last year it reached 26.9 percent, with a trend toward further growth. The reason for this is the advantages which this form of trade offers to our organizations of associated labor. That is, since these transactions conform to the principle of proportionality, that is, in the ratio of 1:1, and payment and settlement are made

through separate accounts, the regulations which apply to regular and general imports and exports do not apply to transactions conducted in the border zone. Analogously, the inflow of foreign exchange in local border trade with neighboring countries is not subject to appropriation of the portion of the foreign exchange to meet general public purposes.

The agreements with Italy we mentioned provide that the Yugoslav side may not go in debt in the separate accounts through which payment and collection are made, that there shall always be a surplus in those accounts; that is, there are to be no difficulties whatsoever in settling accounts for commodities imported, which is not the case with payments for regular imports because of the so-called "circles."

Total Trade--39.7 Percent

Last year's visible trade of Croatian organizations of associated labor through local border trade with Italy therefore reached a value of 147.6 billion lire of exports and 132.5 billion lire of imports, for a total of 280 billion lire. That is 39.7 percent of Croatia's total trade with that country, or 44.5 percent of exports and 25.5 percent of imports, while in Yugoslavia's border trade with Italy this represents 30.5 percent of exports, 32.9 percent of imports, and 31 percent of total Yugoslav border trade with that country (organizations of associated labor registered in Slovenia account for 69 percent). Livestock, meat and other slaughterhouse products, and then wood and wood products represent more than half of exports in border trade (commercial fertilizers, oils and products of their distillation, organic chemical products and power machines and appliances also have a sizable share). Moreover, the principal items in imports under this form of trade are certain products and waste of the food processing industry, prepared food for animals, commercial fertilizers, oils and products of their distillation, organic chemical products and products of steel and iron.

Agreement on Self-Limitation

This February this Federal Secretariat for Foreign Trade proposed to the Federal Executive Council that local border trade restricted to a maximum of 15 percent of Yugoslavia's total visible trade with each of the neighboring countries be conducted on the basis of a distribution that would be made in the Economic Chamber of Yugoslavia among organizations of associated labor registered for that form of trade with the particular country (in Buje Opština of the Croatian economy there are nine basic organizations of associated labor, there are 24 organizations of associated labor registered in the border area of SR [Socialist Republic] Slovenia, 13 of them operating only for their own needs). It is also significant that this federal body has insisted that goods produced in the border zone be covered by the legislative limit and that goods be imported which will be used in that same zone, and it was prepared in this connection, proceeding on the basis of the intergovernmental agreements concluded, but in accordance with a proposal of the Economic Chamber of Yugoslavia, to publish a list of products which can be exported and imported in local trade. Only if the regular exporting of some commodity to a particular country has been obstructed would it be possible as

an exception to add to the list products which have not been produced in the border region.

Judging that adoption of those proposals of the Federal Secretariat for Foreign Trade would adversely affect the interests of associated labor in our two republics which actually "carry on" local border trade with Italy, their respective economic chambers took steps toward conclusion of agreements on self-limitation of this form of trade which were signed by the registered organizations of associated labor.

A Different Basis for Export Quotas

While the volume of local border trade with Italy would be bought within the limit of the order on Yugoslavia's Joint Exchange Policy for this year, that is, limited to about \$320 million, exports of lumber, firewood and logs would have to be cut in half under the agreement, and exports of nonferrous metals in the unprocessed state and of noble metals, as well as corn (except for the duty-free list) would be halted. In addition, all other sales which the signers of the agreement had last year on that market would have to be cut back 20 percent. That is how the export quotas were arrived at for all the registered organizations of associated labor. The same principle concerning exports would also apply to other organizations from throughout the country which export their goods to the border region with Italy through organizations which signed the agreement.

The agreement has been submitted to the national banks of Slovenia and Croatia and to the Federal Secretariat for Foreign Trade, but so far an official position has not yet been taken concerning it.

We need to emphasize that not a single organization of associated labor from other republics and the two provinces has been registered for border trade in SR Croatia (there is one application for registration by the organization of associated labor "Generaleksport" on which the Economic Chamber of Croatia has not yet rendered its opinion), while in SR Slovenia four such organizations of associated labor are registered ("Voce," "Koopeksport," "Sljeme" and "Centrokoop"). Also, no production has been organized in the border region of SR Croatia with Italy that would be involved in local trade.

We should also say in conclusion that at the same time that the agreement was adopted on self-limitation of local border trade with Italy, its signatories took the initiative for amendment of the order mentioned insofar as it limits the volume of visible trade through local transactions with neighboring countries. Unless there is a favorable settlement this year, the unanimous view is that resolute and documented opposition should be offered to this kind of limitation of local border trade with neighboring countries at the time when the order on joint foreign exchange policy for 1985 is being prepared for adoption.

7045
CSO: 2800/335

YUGOSLAVIA

IMPLICATIONS OF OPERATION OF MARKET LAWS ARGUED

Belgrade NEDELJNE INFORMATIVNE NOVINE in Serbo-Croatian No 1740, 6 May 84
pp 12-13

[Article by Dimitrije Boarov: "The Bugbear of the Market and the Price of Tyranny"]

[Text] "What is now happening in our economy is occurring according to law." "The determination to tame the spontaneity of the 'invisible hand' of the market has in practice taken on the features of the tyranny of the 'visible hand' of administrative-bureaucratic forces." The first sentence was uttered by Professor Ljubomir Madjar, and the second by Slobodan Divjak in last week's discussion of economic laws under socialism. At a time when one hears criticism to the effect that some people are attempting to evade the Economic Stabilization Program by carrying the debate back to topics which have already been discussed, when one hears lament that the Stabilization Program is a throwback to the "bourgeois economy," when the fear of the "bugbear of the market" is being stirred up more and more, and when economic voluntarism is being rejected ever more pronouncedly, the discussion of this key economic issue has great specific gravity, since discussions of economists have often had a significant impact on policy in these parts.

The Center for Marxism of the Serbian LC Central Committee, in organizing a 2-day discussion of the topic "Economic Laws and a Socialist Economy" on the eve of the May Day holiday, made a new attempt to bring out into the open the real disagreements among Yugoslav economists (and not confined, of course, to them) about the truly key issues of the economic system. There are few people who are not aware that for more than 20 years theoretical discussions have been conducted in our economic science about a market economy, social ownership, the elementary motives for the conduct of economic activity, the function of the money, the plan, expanded reproduction, and so on, and that the opposed camps have referred to one another as the "incomers (dohodasi)" and the "profitarians (profitasi)."

An informed glance at the list of introductory speakers--Smiljan Jurin, Dragoje Zarkovic, Zarko Popic, Slobodan Divjak, Mihailo Crnobrnja and Dragutin Marsenic--reveals that the organizer of this meeting had the intention of having the discussion opened by people who think and write differently.

It should immediately be said that Zarko Popic was truly isolated in this company of introductory speakers with his emphasis on the "process of conscious regulation of the market and economic laws." The fact that practically all the others followed the lead of the assessments of Smiljan Jurin to the effect that economic laws "do not depend on the will of people's consciousness" and that they cannot be "abolished, suspended, frozen, restricted or altered" obviously indicates the "arithmetic balance of power" between the opposed economists--but not the size of influence on construction of the economic system over the last 10 years. It is this circumstance that Branko Horvat had in mind when he caustically remarked that he did not understand why our official policy relied on the "dissidents" among economists.

Dragutin Marsenic put the consequences of the disagreement in a "serious" light with his assessment that "our economic system is inefficient" and as such "is an exercise ground in which differing approaches are taken on fundamental issues which have crucial importance not only to its functioning, but indeed to its survival." He even attempted to precisely delineate the differences between the two schools among our economists, finding opposed opinions in views of self-management, the market economy and the system of expanded reproduction.

Between Freedom and the Vision

The speech made by the host of the meeting Zoran Pjanic, who even in his introductory address called attention to the vertical political dimension of the free operation of economic laws, demonstrated that this scientific discussion was anxious to avoid "one economist trying to outwit another." As he put it, freedom of choice in consumption and freedom of choice of employment are among those elementary economic liberties without which it is impossible to imagine a free socialist society. Work is not only man's urgent need; the struggle for existence (survival) is at the heart of every individual--which is why an "economy without coercion" has never had a real basis. Pjanic issued a warning that with our "all-inclusive system of concluding compacts and accords" we have actually taken the road of voluntarism and the road of "violating" economic laws.

Marjan Korosic, aiming probably at those who normatively sketched out the mechanism of an agreed economic system around Marx's association of free producers, said that a vision of a future society was not capable of resolving current social problems. Visionaries are always rushing off somewhere, they are constantly proposing [illegible word] paradise here and now, Korosic said, emphasizing that we can hardly find a way out of our economic crisis under the pressure of the accusation that advocating respect for the social laws of a market economy signifies "advocating restoration of bourgeois society."

"The determination to tame the spontaneity of the 'invisible hand' of the market has in practice taken on the features of the tyranny of the 'visible hand' of administrative-bureaucratic forces," said Slobodan Divjak, recalling that Marx himself wrote that when a thing (commodity) is divested of its social power (exchange value) then that social power becomes power "of persons over persons."

Economic Laws

Anyone who was late for the beginning of this discussion of economists in the "Sava" Center might have found himself in utter confusion when he later opened the mimeographed copy of Branko Horvat's paper. This scholar of ours, with his wide-ranging education, placed at the beginning of his paper the precise definitions of Galileo's laws of a free-falling body, Kepler's laws on the motions of the planets, Newton's axioms.... Only later on does one come upon Marx, Lange, Gossen, Engels, Gresham, Pareto and their definitions of economic laws, axioms and theorems. [The names Galileo, Kepler and Gresham are given incorrectly.] Horvat's point in making this comparison was probably to renew the dignity of economic laws (and probably to demonstrate the breadth of his own systematic approach), yet still he himself says that there is for all practical purposes no such list of those key economic laws either in our own literature or in the world literature. Indeed this remark itself suggests the conclusion that it is not a simple matter to accept his instruction that "economic laws should neither be thwarted, nor amended--since this is impossible--they should be used."

In this sense Ljubomir Madjar put the question--How is it possible for an economic law to exist if there are departures from it? In his opinion even what is now happening to our economy is happening according to law. It is, of course, a question of the conditions under which the economic laws operate--according to some they are building, and according to others tearing down, the goals that have been set.

Zarko Papic is also for respecting economic laws, but he sees "conscious control" of commodity production precisely as one of the economic laws. Papic finds support for this assertion in the view that "work produces value, but it also produces conscious activity." Work, then, is the birthplace of both the law of value and of conscious action. For him the essential question is that of "control of commodity production in the historic sense of the word." And changing the "owner" of commodity production and the process of overcoming it are mutually related and for that reason, Papic says, "one of the economic laws is the transformation of economic laws."

"The notion that economic life in countries where the political power of capital has been thrown out can be directly regulated, i.e., that commodity-money relations can be displaced, has shown itself to be very unsuccessful in practice," says Dragoje Zarkovic, adding that "the attempt to institute social ownership of the means of production under the conditions of low socialization of production inevitably ends up in statist-bureaucratic usurpations and group-ownership deformations, in which the means of production are used as one's own, and preserved as someone else's."

Motivation--Income or Personal Income

The discussion of economic laws on this occasion once again centered specifically on an old problem--the nature and function of income--which in our system is legislatively defined as the principal motivation of economic activity.

Referring to the Long-Range Economic Stabilization Program, Zarko Papic presented the well-known view of the homogeneity of income, which work collectives appropriate as the "entirety of the newly created value," as their basic goal, so that they are objectively in a situation of "striving for long-term conscious control of their market ties." Under the conditions of social ownership, they will do this through conscious regulation of their relations with other work collectives, initiating a process of "mutual establishment of ties and respect in accordance with economic logic."

This view of Papic's was once again on this occasion subjected to unsparing criticism, beginning with the point that it is impossible for it to represent the newly created value (Ljubomir Madzar [different spelling given in original]).

Smiljan Jurin clearly stated that the thesis that total income is the maximum of the payoff function is untenable when one of the items it contains is personal income. "According to the payoff function so conceived the process of maximization lasts until the additional worker contributes to augmentation of income regardless of how great that increase is relative to the necessary appropriations from income, [last clause of sentence unintelligible]." Which is why Jurin, along with a majority of the participants in this meeting, stress that in a self-managed economy the law of the average personal income prevails (which according to Horvat is analogous to the law of average profit under capitalism). If the principal goal of economic entities is to maximize personal income, labor moves to those employments where the income is higher, which tends to average out personal incomes (worker mobility is assumed).

Overlengthy Disputes

Significant remarks were made about the problems of defining income and its role by Mihailo Crnobrnja. He stated in simple terms that the thesis that income is homogeneous fell down in the empirical verification, but that the opposite argument, which passes the test of practice, could not be put in operational terms. After all, "it includes and presupposes competition as a form for overcoming contradictions and as a type of economic coercion."

"Since it is difficult for many people to accept competition," Crnobrnja says, "as a theoretical principle, when they have to close their eyes to the fact that with its immutable logic it has in one fashion or another made its way in practice, the theoretical principles of the nonhomogeneity of income were not put in operational terms. Economic theory has fallen victim to political pragmatism."

Perhaps Hasan Hadziomerovic stated the best assessment of how practice resolves the conflict with norms and the prevailing theories. He said that work collectives have two souls--the entrepreneurial soul and the soul which they have as manpower. First they calculate the price of production--for themselves--and then afterward they portray it institutionally as the income price.

It is not, of course, possible, nor indeed necessary, to record in the newspaper all the finesse of this discussion about economic laws in a socialist economy. However, experience has shown that all our disputes last too long and revolve around arguments which are for all practical purposes unchanged. Recall the time when it was said that practice was out in front of theory. Then came assessments that theory "had moved out in front." Fortunately or unfortunately--economic laws are not sleeping.

7045

CSO: 2800/343

YUGOSLAVIA

REPUBLIC FIRST QUARTER TRADE TO CONVERTIBLE MARKET

Belgrade PRIVREDNI PREGLED in Serbo-Croatian 3 May 84 p 2

[Article by M. Urosevic: "Planned Deficit Cut in Half"]

[Text] Events in foreign trade are arousing more and more interest among businessmen, which is understandable, since a turning point in the economy as a whole, which is a condition for gradually achieving economic stabilization, is mostly dependent upon the results of this trade. In all of this, most attention is being given to trade with the countries of the convertible currency area, with which about two thirds of the trade in both directions is planned to be carried out this year, while it is precisely in the "hard" currencies that more than four fifths of the negative difference is expected to be "registered."

It must be emphasized that the Federal Institute for Statistics has made a considerable effort to satisfy this interest on the part of businessmen to a greater extent than previously, although still not sufficiently. More frequent publication of data on foreign trade, overall and separately for the convertible area, makes it possible by recalculation to arrive indirectly at the results in the clearing currency area, which is likewise becoming more and more interesting. In this way it is becoming possible, although recalculation is the only way, to follow the results both by overall trade and by currency areas, especially since in contrast to previous years, we are encountering increasingly more different behavior on the part of individual actors in this process. The following data show the state of affairs in the convertible market:

1) RAZMENA SA KONVERTIBILNIM PODRUČJEM JANUAR-MART 1984.

	2) U milionima dinara			3) Pokrivenost uvoza	4) % učešća u:		
	5) Izvoz	6) Uvoz	7) Deficit		izvozom	izvoru uvozu	deficitu
SFRJ 8)	189.460	208.236	18.776	91,0	100,0	100,0	100,0
- Bosna i 9)	23.955	25.889	1.934	92,5	12,7	12,4	7,7
- Hercegovina							
- Crna Gora 10)	3.232	5.125	1.893	63,4	1,7	2,5	7,6
- Hrvatska 11)	43.956	49.115	5.159	89,5	23,2	23,6	20,6
- Makedonija 12)	8.193	12.994	4.801	63,1	4,3	6,2	19,1
- Slovenija 13)	44.582	40.701	+ 3.881	109,5	23,5	19,7	-
- Srbija van teritorija pokrajina 14)	43.416	41.008	+ 2.408	105,9	22,9	19,7	-
- Vojvodina 15)	19.647	19.660	13	100,0	10,4	9,5	0,1
- Kosovo 16)	2.413	3.166	753	76,2	1,3	1,5	3,0
Federacija 17)	65	10.578	10.513	0,6	0,0	5,1	41,9

Key:

- 1) Trade with the Convertible Area, January-March 1984
- 2) in millions of dollars
- 3) extent to which imports were covered by exports
- 4) % participation in:
- 5) exports
- 6) imports
- 7) deficit
- 8) SFRY
- 9) Bosnia-Hercegovina
- 10) Montenegro
- 11) Croatia
- 12) Macedonia
- 13) Slovenia
- 14) Serbia without the provinces
- 15) Vojvodina
- 16) Kosovo
- 17) the Federation

There are no data from which it would be possible to obtain the results of trade by currency areas for the same period of last year, as a result of which this year's quarterly data can only be compared with the planned ratios for this year. Viewed thus, the exports, at 189.5 billion dinars, constitute 85 percent of the projection for this quarter, the imports, at 208.3 billion dinars, represent 76 percent of that same "quota," and the deficit of 18.8 billion dinars constitute only 43 percent of a fourth of what was projected for the entire year. This was achieved in such a way that for 100 dinars of imports, goods worth 91 dinars were exported, instead of the planned 84 dinars.

Recalculated, goods worth \$1,5182 billion were exported, with \$1,6686 billion paid for imports, and the negative balance was no more than

\$150.4 million, while according to the program it was expected to amount to about \$350 million. This means that this is the most valuable index in trade with the countries of this currency area.

The participation of individual republics and provinces in the results achieved is very different.

Thus, Bosnia-Hercegovina had a negative balance of \$15.5 million, Montenegro \$15.2 million, Croatia \$41.3 million, Macedonia \$38.5 million and Kosovo \$6 million, in addition to the Federation, which bore most of the \$84.2 million deficit. A positive balance of \$31.1 million was recorded by Slovenia, \$19.3 million by Serbia, and a symbolic \$100 million by Vojvodina.

9909
CSO: 2800/316

YUGOSLAVIA

REDUCTION OF ECONOMIC BRANCHES IN FOREIGN COUNTRIES

Belgrade PRIVREDNI PREGLED in Serbo-Croatian 8 May 84 p 3

[Article by Sl. Sindolic: "Following the Example of the Banks and Transporters"]

[Text] Following the decision by Yugoslav banks to establish joint representations in several major centers abroad (Milan, Vienna, Amsterdam, and Stockholm), JAT [Yugoslav Air Transport] also decided to make its network abroad more efficient. Thus, among other things it was decided that instead of the present 46 representations, JAT would soon have 37 in several countries, proceeding from the established criterion that one invested dollar has to yield at least two. For this very reason, during the period decisions on new representations will depend to a very great extent on trends in the foreign market and on the development program of this airline, our largest.

Our largest river transporter, Yugoslav River Shipping in Belgrade, is also participating more and more in these attempts to make networks abroad as efficient as possible. After the elimination of the agencies in Bratislava and Pasava (West Germany) and the reduction of the number of employees in other agencies (Regensburg, Linz, Vienna, etc.), the agencies abroad of Yugoslav River Shipping will soon become joint business representations that will also work simultaneously for the needs of Dunavski Lojd, Krajina, Heroj Pinkije, Jugobrod, and several shipping firms from Yugoslavia.

Together with the Community of Yugoslav Railroads and Jugosped in Belgrade, Yugoslav River Shipping has recently taken one more step in the direction of doing business as efficiently as possible. Soon these three organizations are to sign a self-management agreement on joint work and the performance of commercial and operational work in the Soviet Union, with headquarters in Moscow. The main content of this document is to ensure that goods are transported between the two countries as economically and efficiently as possible, and to ensure joint combination of the sale of Yugoslav transportation services for Soviet goods in transit across Yugoslavia, and the purchase of transportation services for Yugoslav goods in transit across the USSR. This method of doing business is creating the

conditions for directing goods to the most favorable route and type of transportation.

The comprehensiveness and great usefulness of a document like this can also be seen in an agreement on performing several joint matters: the realization and monitoring of the intergovernmental Yugoslav Committee for Economic and Scientific-Technical Cooperation and its Working Groups for Cooperation with the USSR in the area of transportation, followed by assistance to our organizations and representations in Moscow in "finding and determining the most favorable transportation terms," the guiding of the flows of goods, the creation of conditions for the development of container transportation in both directions, etc. Joint work will also be done on finding the most suitable solutions for the transportation of Yugoslav goods across the USSR for third countries, and there will be cooperation with the corresponding Soviet organizations in the area of transportation (shippers, shipping lines, railroads, highway transporters, etc.). The joint business unit, with respect to the Joint Economic Representation of the Yugoslav Economic Chamber [PKJ] and other state and social institutions in Moscow, will be represented by a coordinator. The participants in the agreement are responsible for the expenses of their representation and an adequate part of the joint overhead and material expenses.

Although the reduction in the number of representations abroad is going fairly slowly, it nevertheless appears that the most suitable and best solution is the one found by the firms themselves -- jointly. Back at the beginning of March this year the competent federal authorities established that of the 1,088 units outside our borders, 470 should continue operating, and 402 should be abolished, while the work of the remaining 216 is to be reexamined again. Consequently, it also seems that the "period of reexamination" should be used most of all by the firms themselves and that they should do what the banks and our transporters have done -- naturally, including several organizations in a joint representation.

9909
CSO: 2800/316

YUGOSLAVIA

SERBIAN ECONOMISTS ASSESS LARGE ECONOMIC SYSTEMS

Belgrade PRIVREDNI PREGLED in Serbo-Croatian 8 May 84 p 2

[Article by Lidija Cocaj: "The Economy Is Paying the Bill for Fragmentation"]

[Text] Large technical and technological systems can have a very great deal to contribute to achieving a united Yugoslav market, but they can likewise bring about its disunity. The assertions about their great contribution to the unity of the market, however, are not supported by the mechanisms by which this would be achieved. Unfortunately, instead of becoming links, they have had a considerable effect on splitting up the market and on its fragmentation into republic and provincial boundaries, and have become elements around which power centers are being created. Large systems are not the only ones responsible for this state of affairs; the sociopolitical communities also bear a large part of the blame.

These were the main views that were heard at a recent conference of Serbian economists in Titovo Uzice that was devoted to large systems and the unity of the Yugoslav market. Since representatives of the postal, telephone, and telegraph services [PTT] did not appear on this occasion, although they were invited, the economists stated their opinions on self-management organization, financing methods, and prices in railway transportation and the electricity system.

The economists see the causes of fragmentation here as being primarily the fact that the provisions of the Law on Associated Labor concerning the self-management organization of large systems are being inadequately applied. It is well known, for example, that in our country there are eight electricity systems, while there is no real unity even within them, and it is also known that almost none of the OOURs [basic organizations of associated labor] in the railroad were formed as stipulated by the Law on Associated Labor. To some extent this is a consequence of the euphoria of the formation of OOURs. The technical-technological unity of the railroad and the electricity system should consequently be accompanied by self-management organization, since these systems, as they are organized today, are not contributing to the unity of the Yugoslav market. This disorganization and inefficiency are contributing a great deal to the growth of expenses. In a situation in which almost every producer is in a

monopolistic position, such high expenses are tolerated, since they can be incorporated very easily into the prices of the products.

The economists were unanimous in considering that this disorganization, as it is now, is also contributing to having very different prices, so that it happens, for example, that certain republics and provinces "save" 200-300 billion dinars on the difference in the price of electricity. The economists also challenged the need to use world prices for electricity, and advocated the establishment of uniform prices for the railroad. Eliminating disparities in prices in railroad transportation in the way used in Yugoslavia is not possible, since other prices are not standing still. It was precisely for this reason that 60 percent of the results of the latest price rise were "swallowed" by expenses, without even a dinar remaining for reserves. The economists feel that the problem of price compensation should be resolved at the national level.

One of the issues to which particular attention was devoted had to do with the problem of investments in large systems. The unanimous position was that self-financing is out of the question, but also that joint investments are not of such interest, since only 10-15 percent of the real value of this funds is returned. For this reason joint investments are only made for the sake of supply and not earning income, and that is the reason for the proposal that associated funds for development be reassessed. With respect to investment in the development of railroad transportation, a particular problem is presented by the fact that it is virtually left to itself, with almost half of the current amortization being postponed for the repayment of debts. Undoubtedly the way out is through a self-management concentration of funds that would be invested in the installation most economically suitable and most efficient.

Because of all this, and especially because the economy as a whole pays the bill for the disorganization of the large systems, radical changes should be made as soon as possible, not minor modifications. If this dilemma still exists, that means that there is also deviation from implementing the Long-Term Economic Stabilization Program. Possibly also worthy of attention is the question of whether large systems should operate autonomously or whether they should have a "guardian." The "guardian" in such a situation could only be the economy, through its association, the chambers.

9909
CSO: 2800/316

YUGOSLAVIA

NEW CAPACITIES IN CHEMICAL INDUSTRY

Belgrade BORBA in Serbo-Croatian 3 Apr 84 p 3

[Article by A. P.: "Chemistry Will Turn To Raw Materials"]

[Text] (Belgrade, 2 April) -- The theme of an ambitious Yugoslav conference in Dubrovnik from 18 to 20 April was how to achieve a greater degree of organization, association, and a reduction of the disparity among the processing capacities of the chemical industry, the raw material base, and dependence upon imports, within the framework of the preparation of the plan for the 1986-1990 development of the industry. Journalists were acquainted with the goals of the conference at the Yugoslav Economic Chamber, which has an interest and a need for these goals primarily for the sake of coordinating development with trends on the world market, by which the domestic chemical industry is guided and on which it is very dependent.

After oil, the chemical industry is after all the largest importer of raw materials, and in terms of foreign exchange is an inactive branch (\$2 billion in imports last year and \$1.1 billion in exports). The branch's foreign exchange balance, however, does not show the dependency of other branches, especially agriculture, the tire industry, medicines, detergents, and others, for the needs of which it in fact both imports and processes 70 percent of the raw materials. Better days are ahead for it, however, in regard to dependence on imports, provided that 1.5 billion tons of unrefined gasoline, worth about \$310 million, is secured this year as planned. Enriching this to a higher degree of refinement would earn about \$900 million.

A reduction of the chemical industry's dependence on imports will be achieved to a significant extent by putting into operation or getting into full swing significant capacities as early as this year. When Kutina II starts to operate at full capacity next year, it will no longer be necessary to import ammonia (75,000 tons this year), and there will even be some left over for export. The Synthetic Rubber Factory in Zrenjanin has started to operate, and two plants are being completed in Tuzla and Baric for the production of [polyvetrane ?], some of which will also be left over for export. PRVA ISKRA in Baric is completing an installation for the production of LAB, the basic raw material for the production of detergent.

9909

CSO: 2800/295

YUGOSLAVIA

DATA ON REPUBLIC EMPLOYMENT 1982

Sarajevo OPREDELJENJA in Serbo-Croatian No 1, Jan 84 p 58

[Excerpt] Table

1) Stepen zaposlenosti i stepen nezaposlenosti po republikama i pokrajinama¹⁾

1982.

	2) Broj stanovnika	3) Broj zaposlenih	4) Stepen zaposlen. %	5) Broj nezapos.	6) Stepen nezapos. %
7) SFRJ	22 740 000	5 979 800	26,29	862 500	12,5
8) SR Bosna i Hercegovina	4 204 000	890 200	21,20	160 300	15,2
9) SR Crna Gora	597 000	137 200	22,98	26 500	16,1
10) SR Hrvatska	4 631 000	1 441 700	31,13	99 200	6,4
11) SR Makedonija	1 955 000	451 800	23,10	127 400	22,0
12) SR Slovenija	1 912 000	785 700	41,09	13 700	1,7
13) SR Srbija (ukupno)	9 441 000	2 272 000	24,06	435 400	16,0
14) SR Srbija bez pokrajina	5 742 000	1 512 000	26,33	271 500	15,2
15) SAP Kosovo	1 657 000	189 200	11,41	77 700	29,1
16) SAP Vojvodina	2 042 000	570 600	27,94	86 200	13,2

Key:

1. Extent of Employment and Extent of Unemployment by Republics and Provinces
2. Number of inhabitants
3. Number employed
4. Extent of employment
5. Number unemployed
6. Extent of unemployment
7. SFRY
8. Bosnia-Hercegovina
9. Montenegro
10. Croatia
11. Macedonia
12. Slovenia
13. Serbia (total)
14. Serbia without the provinces
15. Kosovo
16. Vojvodina

FARM INCOME DATA SHOWS INCREASE IN 1983

Belgrade EKONOMSKA POLITIKA in Serbo-Croatian 21 May 84 p 19

[Excerpts] Data from the Federal Bureau of Statistics show that farmers are living better, although there are significant differences in individual areas. In 1983 the average rural household with 4.2 members had a monetary income of 337,651 dinars, although there were great variations within regions and even greater among households. The smallest income for the year was for rural households in Montenegro (194,127 dinars) and the highest in Vojvodina (635,854 dinars). Vojvodina (as well as Croatia) had also the fewest members in households (3.6). Monetary income for rural households increased 32 percent over 1982; i.e., six points more than the growth of personal income for [urban] employees in the same period. These figures do not include the part of [farm] production which is used for personal use, largely food, and which significantly lowers the family budget expenses.

Although income from outside jobs, social [welfare] payments, transportation services, and the cottage and artisan industries also flow into the income of rural households, the monetary income from farming [alone] in the last few years has been increasing faster and its share in the rural family budget is also increasing. Thus, in 1983 income from farming accounted for 49.2 percent of rural household income, representing a 45 percent increase over 1982; at the same time income earned outside of farming increased by only 21.2 percent. In purely farming households income from farming rose 49 percent in this period, and in mixed rural households it increased 51 percent.

However, there were large differences in individual areas. In Montenegro in mixed households, income from farming accounted for 14.5 percent of total income and in Vojvodina it accounted for 55.4 percent. In purely agricultural households farming income was lowest in Kosovo, accounting for 27.2 percent of total income, and in Bosnia-Hercegovina (49.9 percent); but it accounted for 68.7 percent in Slovenia, 69.1 percent in Serbia proper, 75.1 percent in Montenegro, 86.2 percent in Macedonia, 88 percent in Croatia, and 88.6 percent in Vojvodina.

Last year farms earned most income from livestock-raising which increased 59.6 percent over 1982, while income from crops rose 34.4 percent over 1982, and income from the sale of fruit and grapes increased only 2.2 percent. In purely agricultural households 55.2 percent of monetary income was earned

from livestock raising and 38 percent from crops. Income from the sale of livestock products especially dominates in Bosnia-Hercegovina (62 percent of total income), Montenegro (66.4 percent), Croatia (67.5 percent), Kosovo (70 percent), and Slovenia (over 78 percent); while in Macedonia and Vojvodina most monetary income from farming is earned from field crops.

Also in mixed households income from livestock accounts for 81.1 percent in Croatia, 81.5 percent in Bosnia-Hercegovina, and 86.4 percent in Slovenia.

Income earned in purely farming households from transportation services, cottage industry, and work for other private farmers accounts for 32.6 percent of total income, in Bosnia-Hercegovina, and for nearly one-quarter of income on such farms in Kosovo and Serbia proper.

Mixed households average 4 members and farming households average 2.8 members in Slovenia; while in Montenegro the averages are 4.1 and 3 and in Kosovo 8.6 and 6.6 members.

In 1983 monetary income for mixed households averaged 334,245 dinars and in purely farming households it was 345,029 dinars. But in Montenegro mixed households earned 207,931 dinars and farm households 109,678; in Slovenia 409,507 and 248,974 dinars; and in Kosovo 313,212 and 157,527 dinars, respectively.

Monetary expenditures for all rural households last year averaged 261,769 dinars, or 77.5 percent of income; this represents an increase of 24.7 percent over 1982 (expenditures for farming operation rose 30.9 percent and for personal needs 25 percent).

CSO: 2800/354

AGRICULTURAL INVESTMENTS, SOCIAL, PRIVATE SECTORS

Belgrade PRIVREDNI PREGLED in Serbo-Croatian 13 Apr 84 p 3

[Article by M. Urosevic: "Private Sector Took the Lead"]

[Text] There is no meeting devoted to agriculture, especially with respect to the agroindustrial complex, at which the cause of insufficient production, modest exports, and large imports is not emphasized as being a lack of investments in food production. In addition to this argument, there also follows the constant refrain about the need for agriculture to receive the same status as other branches of the economy, that instead of those "supplying" the economy with food, it should obtain the income, forming prices as it sees fit. The uninformed could become convinced from this that this reasoning is justified, in spite of the reliable facts that demonstrate the contrary.

Thus, the Federal Institute for Statistics notes that in 1982, the index of prices for the producers of industrial products in comparison with 1978 was 260; for agricultural ones, 351; and for retail prices, 300. It is not difficult to perceive from the figures cited that it was the food producers who actually "sponsored" this high growth in retail prices.

It is worthwhile, however, to emphasize the fact that the branches of industry that rank together with agriculture also raised their prices considerably more than the average for this entire area, which can nevertheless be overlooked here. Another complex of relations that demonstrates the untenability of the assertion concerning the subordination of farmers in regard to prices, is also contained in a document of the Commission of Federal Councils for the Problems of Economic Stabilization, under the title of "Long-Term Program for the Development of Agroindustrial Production." According to this document, the amount of wheat that had to be given in 1975 for 100 kilograms of KAN was reduced in 1981 by a fifth, the amount of corn by 8 percent, and sugar beet by 11 percent, while it was only necessary to give 2 percent more sunflower seeds. In 1981 it was necessary to give two-fifths less wheat for a 55 hp tractor than in 1975, three-tenths less corn, a third less sugar beet, and 23 percent less sunflower seed, while the amount of wheat for the purchase of a combine was reduced by 33 percent, and the amount of corn by a fourth.

If one takes into account the fact that in 1982 producer prices were increased by one-fourth in comparison with the preceding year, and the prices of the producers of agricultural products by 35 percent, then it is clear that this ratio is even more unfavorable to the producers of industrial products, instead of agriculture being subordinated, as is constantly repeated by representatives of the agroindustrial complex.

In spite of everything that has been said, in view of the fact that the causes of the lagging behind of food production have to be eliminated as soon as possible, it is worthwhile to take a look here at the relationship of the agroindustrial complex and private producers, on the basis of exact data from the Federal Institute for Statistics and the Social Accounting Service, concerning their participation in the creation of the country's social product and their share in the investments in capital assets that have been paid for.

Table.

1) OSTVARENI DRUŠVENI PROIZVOD

Privredna oblast-grana	2) U millionima dinara					
	1978.		1980.		1982	
	4) Iznos	%	Iznos	%	Iznos	%
I PRIVREDA 5)						
- ukupno 6)	901.815	100,00	1.536.029	100,00	2.902.890	100,00
II AGROKOMPLEKS	71.099	7,88	115.884	7,54	251.808	8,67
od toga: 7)						
- Društvena poljoprivreda 8)	30.530	3,38	54.047	3,52	129.240	4,45
- Ribarstvo 9)	674	0,07	865	0,06	1.975	0,07
- Prehrambena 10)						
industrija 11)	27.889	3,09	43.232	2,81	85.688	2,95
- Industrija pića 11)	7.381	0,82	11.185	0,73	21.012	0,72
- Industrija 12)						
stočne hrane 12)	1.225	0,14	2.370	0,15	5.124	0,18
- Prerada duvana 13)	3.400	0,38	4.185	0,27	8.769	0,30
III INDIVIDUALNA						
poljoprivreda 14)	79.202	8,78	133.087	8,66	283.403	9,74

15) ISPLAĆENE INVESTICIJE

Privredna oblast - grana 3)	16) Isplaćene investicije u osnovna sredstva i sredstva zajedničke potrošnje					
	1978.		1980.		1982.	
	4) Iznos	%	Iznos	%	Iznos	%
I PRIVREDA 5)						
- ukupno 6)	363.935	100,00	537.950	100,00	860.536	100,00
II AGROKOM- PLEKS	28.104	7,72	36.272	6,74	66.121	7,68
od toga: 7)						
- Društvena poljoprivreda 8)	10.885	2,99	17.430	3,24	33.391	3,88
- Ribarstvo 9)	132	0,04	236	0,04	926	0,11
- Prehrambena 10)						
industrija 11)	14.208	3,90	14.584	2,71	26.329	3,06
- Industrija pića 11)	1.939	0,53	2.902	0,54	3.407	0,39
- Industrija 12)						
stočne hrane 12)	418	0,12	549	0,10	1.181	0,14
- Prerada duvana 13)	522	0,14	571	0,11	887	0,10
III INDIVIDUALNA						
poljoprivreda 14)	10.245	2,82	14.940	2,78	28.731	3,34

[see Key, next page]

Key:

1. Social Product Achieved
2. in millions of dinars
3. economic area - branch
4. amount
5. economy
6. total
7. agroindustrial complex, including
8. socialized agriculture
9. fishing
10. food industry
11. beverage industry
12. livestock feed industry
13. tobacco processing
14. private agriculture
15. investments paid for
16. paid-for investments in capital assets and means of joint expenditure

The table leaves out the years 1979 and 1981 for practical reasons, to make it more readable, since the relations between the branches of the economy and areas under consideration are for the most part the same. Here there are already evident differences in the share in the social product of the agroindustrial complex, on one hand, and of private agriculture on the other: in 1978, it was 7.88 percent to 8.78 percent in favor of the "peasants." In 1980 both have a lower share, the agroindustrial complex 7.54 percent and the private sector 8.66 percent, while in 1982 this relationship reached 8.67 to 9.74 percent in favor of private agriculture. The share of individual branches within the agroindustrial complex is evident.

The situation is quite different when the following data are considered.

By examining the relationship in the investments paid for in agriculture overall and the share of the agroindustrial complex and private producers in this, we arrive at rarely mentioned indicators. Thus, in 1978 the agroindustrial complex, with 28.1 billion dinars in investments, realized 71.1 billion of the social product, or 2.53 dinars of the social product per invested dinar, while private agriculture provided 7.73 dinars of the social product per invested dinar. In 1980, the agroindustrial complex contributed 3.19 dinars of the social product per invested dinar, while the "peasants" contributed 8.91 dinars; in 1982 the agroindustrial complex contributed 3.81 dinars per invested dinar, while the private producers contributed 9.86 dinars of the social product.

It clearly turns out from comparing the indicators on the creation of the social product per invested dinar in both sectors that the effectiveness of investment in the private sector in 1978 was three times higher than in the agroindustrial complex, while this was reduced to 2.8 times in 1980 and 2.6 times the year before last. This is an improvement, but obviously "at a snail's pace."

If it could be concluded from these relationships that the private producers were being impoverished, then the assertion about insufficient investments in food production could be accepted. But if there are close to 500,000 tractors in the countryside today, along with some tens of thousands of combines and other equipment, with magnificent buildings not being rare, then the problem does not lie in a lack of funds for new investments.

9909

CSO: 2800/295

YUGOSLAVIA

DATA ON CORN PRODUCTION 1951-1982

Belgrade GLASNIK POLJOPRIVREDNE PROIZVODNJE, PRERADE I PLASMANA in Serbo-Croatian No 4, Apr 84 p 21

[Text] Corn occupies one of the leading places in Yugoslav agriculture. Our country is one of the largest corn producers in Europe. On the basis of last year's results, it took one of the first three places among corn producers in Europe (with France and Romania), which also placed it among the 10 largest world corn producers.

Over a lengthy period of time corn production in Yugoslavia has shown the following movements (area in hectares, production in tons, yields in tons per hectare):

<u>Year</u>	<u>Area Harvested</u>	<u>Production</u>	<u>Yield</u>
1951	2,360,000	4,040,000	1.71
1961	2,510,000	4,550,000	1.81
1974	2,256,000	8,031,000	3.56
1975	2,363,000	9,389,000	3.97
1976	2,374,000	9,106,000	3.84
1977	2,321,000	9,870,000	4.25
1978	2,130,000	7,585,000	3.56
1979	2,251,000	10,084,000	4.48
1980	2,202,000	9,317,000	4.22
1981	2,297,000	9,807,000	4.27
1982	2,246,000	11,130,000	4.95

Last year's record harvest (accompanied by record yields per hectare) was about 13 percent greater than the year before last. It is significant in this connection that over the last 10 years or so the largest areas harvested have ranged between 2.2 and 2.3 million hectares.

The growth of corn production, examined over the last 4 years, has also shown a growth trend in almost all republics and provinces (quantities in tons, yields per hectare).

<u>Region</u>	<u>1979</u>	<u>1980</u>	<u>1981</u>	<u>1982</u>
Yugoslavia	10,084,000	9,317,000	9,807,000	11,130,000
Yield	4.48	4.22	4.27	4.95
Bosnia-Hercegovina	713,000	491,000	690,000	761,000
Yield	2.59	2.34	2.80	3.14
Montenegro	15,000	13,000	13,000	14,000
Yield	1.97	1.69	1.65	2.13
Croatia	2,235,000	1,960,000	2,399,000	2,509,000
Yield	4.54	4.15	4.62	5.00
Slovenia	227,000	214,000	269,000	276,000
Yield	3.98	3.78	4.39	4.70
Macedonia	91,000	88,000	91,000	93,000
Yield	2.08	2.09	2.26	2.32
Serbia	6,803,000	6,551,000	6,345,000	7,477,000
Yield	4.95	4.65	4.46	5.35
Serbia proper	2,583,000	2,363,000	2,213,000	2,606,000
Yield	3.92	3.63	3.32	4.17
Kosovo	246,000	184,000	223,000	248,000
Yield	2.51	1.84	2.27	2.64
Vojvodina	3,974,000	4,004,000	3,909,000	4,623,000
Yield	6.42	6.07	5.95	6.61

In 1982 corn production was larger than the previous year in all republics and provinces by between 1 and 18 percent. The largest increases were in Serbia and Vojvodina, and the yields per hectare were also the highest. With the exception of Montenegro a record corn production was achieved in all areas last year, and it was also accompanied by record yields per hectare.

7045

CSO: 2800/337

YUGOSLAVIA

BRIEFS

UNPROFITABLE PLANTS IN BOSNIA-HERCEGOVINA--No area, not Bosnia-Hercegovina either, has remained without mistaken investments, duplication of production capacities, a competition in foreign indebtedness, and an escalation of all forms of general, joint, and personal expenditures. [Unprofitable investments such as] "Obrovac" and "Feni" [in other republics] are also found in Bosnia-Hercegovina, in the Kakanj cement plant, Sarajevo Gas, the Bijeljina sugar mill, "Agrokomerc," the "Celuloz" factory in Drvar, the Bihac brewery, etc. The Kakanj cement plant was built almost a decade ago and uses mazut for fuel, despite the fact that the entire basin lies on deposits of quality coal. Sarajevo, by introducing natural gas heating, wanted to solve air pollution problems. But natural gas is becoming more and more expensive and delivery is not always guaranteed. Gas heat is already expensive and even prohibitive for a number of households. The Bijeljina sugar mill was built without assurance of adequate amounts of sugar beets. The enormous funds invested have, practically speaking, blocked the accounts of the commercial banks there, since payments on credits and annuities are late. "Agrokomerc" in Velika Kladusa built modern processing capacities on the basis of corn and now is begging for needed raw material. Instead of investing in primary production (of corn), it invested only in processing. ...It is a similar case with "Celuloz" in Drvar. The brewery in Bihac was built although the area is already well supplied with beer from Karlovac, Banja Luka, and Split. "Obrovac" [although in Croatia] had an entire small army of 15,000 members of business councils, and at least 5,000 secretaries in OOURs (basic organizations of associated labor) in Bosnia-Hercegovina. Recently the [Bosnia-Hercegovina] executive council reported that liquidation lies ahead for about 20 OOURs which have been burdened with losses for years. Is this the beginning of settling accounts with "Obrovac's" in this area? [Excerpt] [Belgrade BORBA in Serbo-Croatian 21 May 84 p 2]

MACEDONIAN NUCLEAR POWER PLANT--Delegates in the Macedonian SIZ (Self-Management Interest Community) for Energy have supported a proposal by "Elektrostopanstvo" (electric power distribution enterprise) to build a 900-megawatt atomic power plant in Macedonia. It would cost 300 billion dinars and would be built jointly with Serbia and Vojvodina; the first discussions on this have already started. Preparations involving economic, financial, technical, and other documentation, as well as construction, would take 12 years. Production would begin between 1995 and 1997. The most favorable locations mentioned are: Krivolak on the Vardar river, Rasimbegov Most on

the Crna river, and Ubogo on the Bregalnica river. Studies made in Macedonia show that some of the raw materials needed for the new plant could be found in Macedonia where deposits are estimated at about 11,000 tons [of uranium], while research would be subsequently carried out to guarantee whether these deposits can be exploited. Delegates also decided about the possibilities of being supplied with uranium from the international market. [Excerpt] [Belgrade BORBA in Serbo-Croatian 18 May 84 p 12]

INCREASED LAND PURCHASE--We do not have data on land prices, but in Vojvodina the number of non-farmers acquiring land in the last few years has tripled and the total amount of arable land which they possess has increased about 10 times. The problem is not in the number of new owners (of whom there are about 113,000) or the hectares they own, but the fact that these 160,000 hectares of arable land (the area of at least four Agricultural-Industrial Combines) is very poorly cultivated and thus produces much less food than would otherwise be the case. The mass movement from the village to the cities was accompanied by a decline in interest for land and a fall in land prices. This situation lasted from about the mid-50's to just before the end of the 60's when a hectare of first-class land in Vojvodina cost 2 months earnings for an average industrial worker. But now a hectare of land costs the average salary of an industrial worker working 40 to 50 months. And the [driving up of] prices has made it impossible for the socialized sector of agriculture to compete for land purchase. No one has calculated how much has been invested in this form of buying land and in building weekend houses, but such calculations would probably show that more bank funds were lent for such purposes than for the total development of primary agricultural production. [Excerpts] [Belgrade BORBA in Serbo-Croatian 12-13 May 84 p 3]

SMALL-SCALE BUSINESS--Intensified action by SAWPY and in society in general toward making fuller use of the opportunities offered by the small-scale economy have started to show results. In the last 4 years the number employed in the small-scale economy increased by about 6 percent, considerably more than the average for the economy as a whole and now totals 507,000 of whom 210,000 are employed in the socialized sector: i.e., in 2,605 OURs (this includes also 153 contract organizations). Growth of the social product in small-scale business is increasing at a rate of 10 percent even while the total economy has shown signs of stagnation for a couple of years. The average personal incomes are also a little higher than in the total economy. Privately-owned production or service businesses on the average employ only one worker; if conditions were created for each of these to employ just one more worker, Yugoslavia would acquire 200,000 new jobs. Quite a bit was said at the 29 May meeting of the SAWPY Federal Conference about the limits placed on the number of workers who can be employed in privately-owned businesses. Republic and provincial laws vary in this regard: most often this number is limited to 5, except in Montenegro, Croatia, and Slovenia where the maximum number is 7, 8, and 10. It was said that in Slovenia artisan and other private businesses have not shown much interest in increasing the number of employees. Most do not think much about employing more than the maximum; those who do estimate that this would be possible only if there was expanded cooperation with the socialized sector of the economy. Slavko

Glinsek (Slovenia) said that opstinas which resist private initiative to invest in small business often do this to "protect" some existing OURs which are not operating successfully. Sefki Bitici made similar statements, pointing also to the unclear criteria which opstinas use to grant permits for local private business: i.e., they grant them for services which society is least interested in. "As a result we have too many cafes and taverns and few artisan production activities." [Excerpts] [Belgrade BORBA in Serbo-Croatian 30 May 84 p 1]

BARTER TRADE--According to the joint foreign exchange policy for 1984, barter trade with the convertible-currency area cannot account for more than 10 percent of total commodity trade with this area. Data on such trade for the first quarter of this year show that this limit has already been reached although only 52 percent of such trade which has been approved has been carried out. Of the \$1,266,000,000 approved, \$697.5 million is exports and \$568.5 million is imports. Of these amounts, exports to the Western developed countries account for \$405 million worth of exports (\$191 million worth has been carried out) and \$301 million worth of imports (\$154.5 million has been carried out). In barter trade with the East European countries (values given in convertible currency) about \$213 million worth of exports has been approved (about \$119 million worth carried out), and about \$199 million worth of imports (\$112 million carried out). Hardly half of barter trade exports approved with the developing countries has been carried out, and a little more than one-quarter in imports, which is not in accord with the joint foreign exchange policy of 1984 on more favorable treatment for this area in concluding barter agreements. [Excerpts] [Belgrade PRIVREDNI PREGLED in Serbo-Croatian 2-4 Jun 84 p 6]

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- END -